

MAJOR KALSHI

CLASSES PVT. LTD.

“A way to get commissioned”

MOCK TEST - NDA (I) 2017

TEST BOOKLET

MATHEMATICS

Time Allowed : *Two Hours and Thirty Minutes*

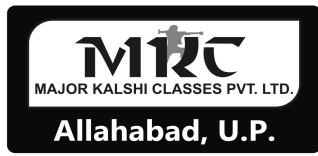
Maximum Marks : **300**

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. **Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/discrepancy will render the Answer Sheet liable for rejection.**
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6. **All** items carry equal marks.
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9. Sheets for rough work are appended in the Test Booklet at the end.
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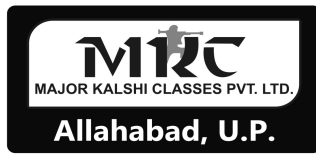
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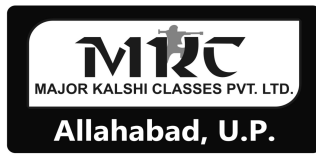
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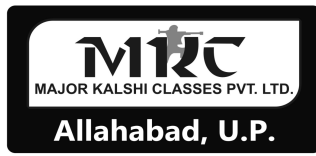
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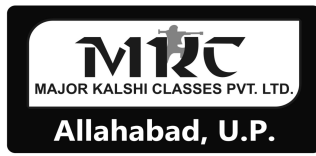
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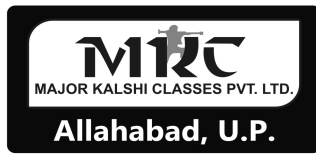
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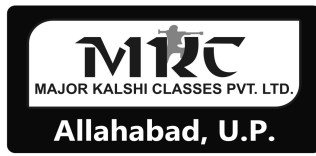
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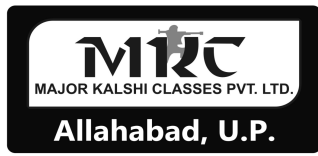
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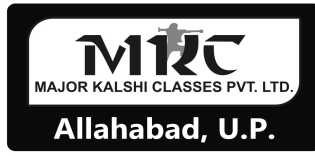
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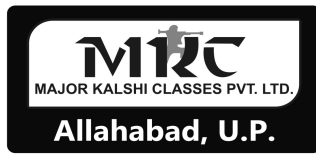
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MAJOR KALSHI

CLASSES PVT. LTD.

“A way to get commissioned”

MOCK TEST - NDA (I) 2017

TEST BOOKLET

MATHEMATICS

Time Allowed : *Two Hours and Thirty Minutes*

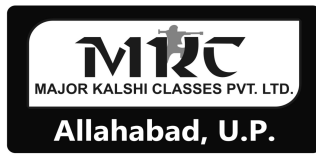
Maximum Marks : **300**

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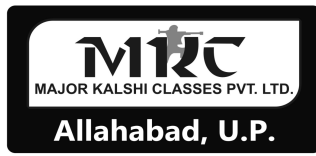
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- (a) 2 (b) 4
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2. Let $P = [a_{ij}]$ be a 3×3 matrix and let $Q = [b_{ij}]$ where $b_{ij} = 2^{i+j} a_{ij}$ for $1 \leq i, j \leq 3$. If the determinant of P is 2, then determinant of the matrix Q is:

- (a) 2^{10} (b) 2^{11}
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(c) $\frac{\pi}{2}$ (d) No solution

5. For any integer n , the integral

$$\int_0^{\pi} e^{\cos^2 x} \cos^3(2n+1)x dx \text{ has the value:}$$

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- (a) $1/4$ (b) $1/8$
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- (a) $1/3$ (b) 1
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14. If 3 natural numbers from 1 to 100 are selected randomly then probability that all are divisible by 2 and 3 both is:

- (a) $\frac{4}{105}$ (b) $\frac{4}{33}$
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15. If $\sin \{ \cot^{-1}(x+1) \} = \cos \{ \tan^{-1} x \}$, then x is:

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16. If the sides of a triangle are in the ratio $1 : \sqrt{3} : 2$ then the angles opposite to these sides of a triangle are in ratio:

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17. If x is the first term of a G.P. with infinite number of terms whose sum is 5, then:

- (a) $0 < x < 10$ (b) $x \geq 0$
(c) $x < -10$ (d) $-10 < x < 0$

1. If $\vec{a}, \vec{b}, \vec{c}$ are unit vectors such that \vec{a} is perpendicular to the plane of \vec{b}, \vec{c} and angle between \vec{b}, \vec{c} is $\frac{\pi}{3}$ then value of $|\vec{a} + \vec{b} + \vec{c}|$ is:

- (a) 2 (b) 4
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2. Let $P = [a_{ij}]$ be a 3×3 matrix and let $Q = [b_{ij}]$ where $b_{ij} = 2^{i+j} a_{ij}$ for $1 \leq i, j \leq 3$. If the determinant of P is 2, then determinant of the matrix Q is:

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3. For the equation $3x^2 + px + 3 = 0$, $P > 0$ if one of the roots is square of other then P is equal to:

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4. The complex number $\sin x + i \cos 2x$ and $\cos x - i \sin 2x$ are conjugate to each other for what value of x ?

- (a) 1 (b) π
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5. For any integer n , the integral

$$\int_0^{\pi} e^{\cos^2 x} \cos^3(2n+1)x dx \text{ has the value:}$$

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Direction: For the next two items that follow: Consider the function $y = a \log x + bx^2 + x$ has its extremum values at $x = 1$ and $x = 2$.

7. The value of a be:

- (a) 2 (b) -2
(c) 3 (d) none

8. The value of b is:

- (a) -1 (b) $-1/2$
(c) $1/2$ (d) none

9. If $f(x) = \cos^2 x + \sec^2 x$, its value always is:

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6. $\int_{1/4}^{3/4} \frac{\frac{\pi}{2} + \cos^{-1} x}{2 \sin^{-1} x + 3 \cos^{-1} x + \cos^{-1}(1-x)} dx$ dk eku gsk%

- (a) $1/4$ (b) $1/8$
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funz'k% vxys 2 i' uk gsrq;

Qyu $y = a \log x + bx^2 + x$ dk $x = 1$ rFkk $x = 2$ ij pje eku gsk%

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- (a) 2 (b) -2
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9. ; fn $f(x) = \cos^2 x + \sec^2 x$ rks bl dk eku l n%
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- (a) $\frac{\pi}{2} + 1$ (b) $\frac{\pi}{2} - 1$
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14. l l s 100 eal s; fn rhu i k-frd l $\int_0^{\pi/2} k; j; k; nPN; k$ puh tkrh gS rks bl ckr dh if; drk D; k gskh fd os 2 rFkk 3 nksuka l s foHkfr gka

- (a) $\frac{4}{105}$ (b) $\frac{4}{33}$
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18. If the lines $\frac{x-1}{2} = \frac{y+1}{3} = \frac{z-1}{4}$ and $\frac{x-3}{1} = \frac{y-k}{2} = \frac{z}{1}$ are intersect each other then k is:
 (a) 2/9 (b) 9/2
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19. If $\alpha \in \left(0, \frac{\pi}{2}\right)$, then $\sqrt{x^2+x} + \frac{\tan^2 \alpha}{\sqrt{x^2+x}}$ is always greater than or equal to:
 (a) $2 \tan \alpha$ (b) 1
 (c) 2 (d) $\sec^2 \alpha$
20. $\lim_{h \rightarrow 0} \frac{f(2h+2+h^2) - f(2)}{f(h-h^2+1) - f(1)}$ given that $f'(2) = 6$ and $f'(1) = 4$:
 (a) does not exist (b) -3/2
 (c) 3/2 (d) 3
21. Orthocentre of triangle with vertices (0, 0), (3, 4) and (4, 0) is:
 (a) (3, 5/4) (b) (3, 12)
 (c) (3, 3/4) (d) (3, 9)
22. Let function $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 2x + \sin x$, for $x \in \mathbb{R}$, then 'f' be:
 (a) one-one and onto
 (b) one-one but not onto
 (c) onto but not one-one
 (d) neither one-one nor onto
23. The Area bounded by the curves. $y = |x| - 1$ and $y = -|x| + 1$ is:
 (a) 1 (b) 2
 (c) $2\sqrt{2}$ (d) 4
24. Suppose $f(x) = (x+1)^2$ for $x \geq -1$. If $g(x)$ is the function whose graph is reflection of the graph of $f(x)$ with respect to the $y = x$, then $g(x)$ is equals to:
 (a) $-\sqrt{x} - 1, x \geq 0$ (b) $\frac{1}{(x+1)^2}, x > -1$
 (c) $\sqrt{x+1}, x \geq -1$ (d) $\sqrt{x} - 1, x \geq 0$
25. The number of values of k for which the system of equations $(k+1)x + 8y = 4k$,
 $kx + (k+3)y = 3k - 1$ has infinitely many solution is:
 (a) 0 (b) 1
 (c) 2 (d) none
26. Let $\omega = -\frac{1}{2} + i\frac{\sqrt{3}}{2}$, then value of the determinant $\begin{vmatrix} 1 & 1 & 1 \\ 1 & -1-\omega^2 & \omega^2 \\ 1 & \omega^2 & \omega^4 \end{vmatrix}$ is:
 (a) 3ω (b) $3\omega(\omega-1)$
 (c) $3\omega^2$ (d) $3\omega(1-\omega)$
27. For all complex numbers z_1, z_2 satisfying $|z_1| = 12$ and $|z_2 - 3 - 4i| = 5$ then minimum value of $|z_1 - z_2|$ is :
 (a) 0 (b) 2
 (c) 7 (d) 17
28. The number of arrangements of the letters of the word BANANA in which the two N's do not appear adjacently is :
 (a) 40 (b) 60
 (c) 80 (d) 100
29. The angle between the straight lines $\frac{x+1}{2} = \frac{y-2}{5} = \frac{z+3}{4}$ and $\frac{x-1}{1} = \frac{y+2}{2} = \frac{z-3}{-3}$ is:
 (a) 45° (b) 30°
 (c) 60° (d) 90°
30. What is the locus of points of intersection of a sphere and a plane :
 (a) Circle (b) ellipse
 (c) parabola (d) none
31. The plane $\frac{x}{2} + \frac{y}{3} + \frac{z}{4} = 1$ cut the axis in A, B, C then the area of the ΔABC is :
 (a) $\sqrt{29}$ (b) $\sqrt{41}$
 (c) $\sqrt{61}$ (d) none
32. A ray of light along $x + \sqrt{3}y = \sqrt{3}$, get reflected upon reaching x-axis, the equation of the reflected ray is:
 (a) $\sqrt{3}y = x - \sqrt{3}$ (b) $y = \sqrt{3}x - \sqrt{3}$
 (c) $\sqrt{3}y = x - 1$ (d) $y = x + \sqrt{3}$
33. If x, y, z are in A.P and $\tan^{-1} x, \tan^{-1} y, \tan^{-1} z$ are also in A.P, then:
 (a) $2x = 3y = 6z$ (b) $6x = 3y = 2z$
 (c) $6x = 4y = 3z$ (d) $x = y = z$

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30. What is the locus of points of intersection of a sphere and a plane :
 (a) Circle (b) ellipse
 (c) parabola (d) none
31. The plane $\frac{x}{2} + \frac{y}{3} + \frac{z}{4} = 1$ cut the axis in A, B, C then the area of the ΔABC is :
 (a) $\sqrt{29}$ (b) $\sqrt{41}$
 (c) $\sqrt{61}$ (d) none
32. A ray of light along $x + \sqrt{3}y = \sqrt{3}$, get reflected upon reaching x-axis, the equation of the reflected ray is:
 (a) $\sqrt{3}y = x - \sqrt{3}$ (b) $y = \sqrt{3}x - \sqrt{3}$
 (c) $\sqrt{3}y = x - 1$ (d) $y = x + \sqrt{3}$
33. If x, y, z are in A.P and $\tan^{-1} x, \tan^{-1} y, \tan^{-1} z$ are also in A.P, then:
 (a) $2x = 3y = 6z$ (b) $6x = 3y = 2z$
 (c) $6x = 4y = 3z$ (d) $x = y = z$

18. ; fn j[kk; a $\frac{x-1}{2} = \frac{y+1}{3} = \frac{z-1}{4}$ rFkk $\frac{x-3}{1} = \frac{y-k}{2} = \frac{z}{1}$
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- (a) 2/9 (b) 9/2
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19. ; fn $\alpha \in (0, \frac{\pi}{2})$ rks $\sqrt{x^2+x} + \frac{\tan^2 \alpha}{\sqrt{x^2+x}}$ l n d cMk
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20. $\lim_{h \rightarrow 0} \frac{f(2h+2+h^2) - f(2)}{f(h-h^2+1) - f(1)}$ fn; k gS fd $f'(2) = 6$

rFkk $f'(1) = 4$:

- (a) $\frac{1}{2}$ (b) $-\frac{3}{2}$
 (c) $\frac{3}{2}$ (d) 3

21. f=Hkt ftl ds "k'k'Z (0, 0), (3, 4) rFkk (4, 0) gS dk
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- (a) (3, 5/4) (b) (3, 12)
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$kx + (k+3)y = 3k - 1$
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- (a) 3ω (b) $3\omega(\omega-1)$
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27. l Hk l feJ l ; kvka z_1, z_2 gS tgl; $|z_1| = 12$ rFkk
 $|z_2 - 3 - 4i| = 5$ rks $|z_1 - z_2|$ dk l; ure eku gskk%

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34. All the students of a class performed poorly in mathematics. The teacher decided to give the grace mark of 10 to each of the students. Which of the following statistical measures will not change even after the grace marks were given:

- (a) median (b) mode
(c) variance (d) mean

35. The equation of circle passing through the foci of the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$ and having centre at (0, 3) is :

- (a) $x^2 + y^2 - 6y + 7 = 0$
(b) $x^2 + y^2 - 6y - 5 = 0$
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36. The x-co-ordinate of the in centre of the triangle that has the co-ordinates of mid points of the sides as (0, 1), (1, 1) and (1, 0) is :

- (a) $2 - \sqrt{2}$ (b) $1 + \sqrt{2}$
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37. The expression $\frac{\tan A}{1 - \cot A} + \frac{\cot A}{1 - \tan A}$ can be written as :

- (a) $\sec A \operatorname{cosec} A + 1$ (b) $\tan A + \cot A$
(c) $\sec A + \operatorname{cosec} A$ (d) $\sin A \cos A + 1$

38. If $y = \sec(\tan^{-1}x)$, then $\frac{dy}{dx}$ at $x = 1$ is :

- (a) $\frac{1}{2}$ (b) 1
(c) $\sqrt{2}$ (d) $\frac{1}{\sqrt{2}}$

Direction: For the next two items that follow:

Consider the Limit, $\lim_{x \rightarrow \infty} \left(\frac{x^2 + x + 1}{x + 1} - ax - b \right) = 4$

then-

39. The value of a is :

- (a) 1 (b) -1
(c) 2 (d) -2

40. The value of b is :

- (a) 4 (b) -4
(c) 3 (d) -3

Direction: For the next three items that follow:

The vertices of a $\triangle ABC$ are $A(2, 3, 1)$, $B(-2, 2, 0)$ and $C(0, 1, -1)$

41. What is the cosine angle ABC?

- (a) $\frac{1}{\sqrt{3}}$ (b) $\frac{1}{\sqrt{2}}$
(c) $\frac{2}{\sqrt{6}}$ (d) none

42. What is the area of triangle?

- (a) $6\sqrt{2}$ (b) $3\sqrt{2}$
(c) $10\sqrt{3}$ (d) none

43. What is the magnitude of the line joining mid point's of the sides AC and BC :

- (a) $\frac{1}{\sqrt{2}}$ (b) 1
(c) $\frac{3}{\sqrt{2}}$ (d) 2

44. If $A = \{x : x^2 = 1\}$ and $B = \{x : x^4 = 1\}$ then $A \Delta B$ is equal to?

- (a) $\{-i, i\}$ (b) $\{-1, 1\}$
(c) $\{-1, 1, i, -i\}$ (d) none

45. If A, B and C are three sets, then $A - (B - C)$ equal to :

- (a) $A - (B \cap C)$ (b) $(A - B) \cup C$
(c) $(A - B) \cup (A \cap C)$ (d) $(A - B) \cup (A - C)$

46. What is the number of proper subsets of a given finite set with n elements.

- (a) $2n - 1$ (b) $2n - 2$
(c) $2^n - 1$ (d) $2^n - 2$

47. If R be a relation on $N \times N$ defined by (a, b) R (c, d) if and only if $ad = bc$, then R is:

- (a) an equivalence relation
(b) symmetric and transitive but not reflexive
(c) reflexive, symmetric but not transitive
(d) reflexive, transitive but not symmetric

48. The area bounded by $y = \sin x$, between $x = 0$ and $x = 2\pi$ is:

- (a) 2 (b) 3
(c) 4 (d) 1

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43. Hkt kvka AC rFkk BC ds e/; fclnq/ka dks feykus okyh j'kk dk ifjek.k gskk&

- (a) $\frac{1}{\sqrt{2}}$ (b) 1
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44. ; fn $A = \{x : x^2 = 1\}$ rFkk $B = \{x : x^4 = 1\}$ rks $A \Delta B$ dk eku gskk&

- (a) $\{-i, i\}$ (b) $\{-1, 1\}$
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45. ; fn A, B rFkk C rhu l e'p; g& rks $A - (B - C)$ cjkj gskk&

- (a) $A - (B \cap C)$ (b) $(A - B) \cup C$
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46. , d fn; sgg ifjer l e'p; ftl ea n vo; o gla dks mfpr mil e'p; ka dh l ; k gskh&

- (a) $2n - 1$ (b) $2n - 2$
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47. ; fn R, d l Ecu/k g N x N ea tksd ifjHkf'kr g (a, b) R (c, d); fn v'k; d'oy; ; fn $ad = bc$ rks g&

- (a) , d r'k; rk l Ecu/k
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48. $y = \sin x$ rFkk $x = 0$ v'k; $x = 2\pi$ l sifjc) {k=Oy} gskk&

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- (a) ekf/; dk (b) cgyd
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- (a) $2 - \sqrt{2}$ (b) $1 + \sqrt{2}$
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- (a) $\sec A \operatorname{cosec} A + 1$ (b) $\tan A + \cot A$
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34. , d d fkk ds l Hkh Nk=ka us xf.kr ea [kjc in"ku fd; ka f"kkkd usi R; d Nk= dks 10 vuqg vad nus dk Qs yk fy; ka fUKEu ea l s dks l k l k; dh; eki vuqg vad nus ds i"pkr-Hkh ifjofr' r ugh gkrk&

- (a) ekf/; dk (b) cgyd
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35. ml o'k dk l ehdj.k D; k gksk tks nh?kz'k $\frac{x^2}{16} + \frac{y^2}{9} = 1$ dh ukfHk l s gkdj tkrk gsvk; ftl dk dlnz 10] 3½ g&

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- (a) $2 - \sqrt{2}$ (b) $1 + \sqrt{2}$
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37. 0; d $\frac{\tan A}{1 - \cot A} + \frac{\cot A}{1 - \tan A}$ cjkj gskk&

- (a) $\sec A \operatorname{cosec} A + 1$ (b) $\tan A + \cot A$
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38. ; fn $y = \sec(\tan^{-1}x)$ rks $x = 1$ ij $\frac{dy}{dx}$ g&

- (a) $\frac{1}{2}$ (b) 1
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fun'k %vxys nks i' ukagr&

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- (a) $\frac{1}{\sqrt{3}}$ (b) $\frac{1}{\sqrt{2}}$
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42. f=Hkt dk {k=Oy} gskk&

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43. Hkt kvka AC rFkk BC ds e/; fclnq/k dks feykus okyh j'kk dk ifjek.k gskk&

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- (a) , d r'k l Ecu/k
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fun'k' %vxys nks i' ukagr& fuEu l hek dk vodyu dhft, &

$$\lim_{x \rightarrow \infty} \left(\frac{x^2 + x + 1}{x + 1} - ax - b \right) = 4$$

39. a dk eku gskk&

- (a) 1 (b) -1
(c) 2 (d) -2

40. b dk eku gskk&

- (a) 4 (b) -4
(c) 3 (d) -3

fun'k' %vxys rhu i' ukagr&

ΔABC ds "kh'kz A(2, 3, 1), B(-2, 2, 0) rFkk C(0, 1, -1) g&

41. $\angle ABC$ dk cosine gskk&

- (a) $\frac{1}{\sqrt{3}}$ (b) $\frac{1}{\sqrt{2}}$
(c) $\frac{2}{\sqrt{6}}$ (d) dkbz ugha

42. f=Hkqt dk {k=Oy gskk&

- (a) $6\sqrt{2}$ (b) $3\sqrt{2}$
(c) $10\sqrt{3}$ (d) dkbz ugha

43. Hkqt kvka AC rFkk BC ds e/; fclnq/ka dks feykus okyh j'kk dk ifjek.k gskk&

- (a) $\frac{1}{\sqrt{2}}$ (b) 1
(c) $\frac{3}{\sqrt{2}}$ (d) 2

44. ; fn $A = \{x : x^2 = 1\}$ rFkk $B = \{x : x^4 = 1\}$ rks $A \Delta B$ dk eku gskk&

- (a) $\{-i, i\}$ (b) $\{-1, 1\}$
(c) $\{-1, 1, i, -i\}$ (d) dkbz ugha

45. ; fn A, B rFkk C rhu l e'p; g& rks $A - (B - C)$ cjkj gskk&

- (a) $A - (B \cap C)$ (b) $(A - B) \cup C$
(c) $(A - B) \cup (A \cap C)$ (d) $(A - B) \cup (A - C)$

46. , d fn; sgg ifjer l e'p; ftl ea n vo; o gla dks mfpr mil e'p; ka dh l ; k gskh&

- (a) $2n - 1$ (b) $2n - 2$
(c) $2^n - 1$ (d) $2^n - 2$

47. ; fn R, d l Ecu/k gN \times N ea tksd ifjHkf'kr gS (a, b) R (c, d); fn v'j d'oy ; fn $ad = bc$ rks gS&

- (a) , d r'k; rk l Ecu/k
(b) l efer rFkk l 'ed ijUrqlor'Y; ugha
(c) Lor'Y; ; l efer ijUrql 'ed ugha
(d) Lor'Y; ; l 'ed ijUrql efer ugha

48. $y = \sin x$ rFkk $x = 0$ v'j $x = 2\pi$ l sifjc) {k=Oy gskk&

- (a) 2 (b) 3
(c) 4 (d) 1

49. The area bounded by the curve $y = 2x - x^2$ and straight line $y = -x$ is:

- (a) $9/2$ (b) $7/2$
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- (a) 2, 3 (b) 3, 2
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(c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

60. If $\int \frac{2^x}{\sqrt{1 - 4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then k is equal

to:

- (a) $\log 2$ (b) $\frac{1}{2} \log 2$
(c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

61. The value of x for which the polynomial $2x^3 - 9x^2 + 12x + 4$ is decreasing function of x is:

- (a) $-1 < x < 1$ (b) $0 < x < 2$
(c) $x > 3$ (d) $1 < x < 2$

62. The maximum value of $\frac{\log x}{x}$ is equal:

- (a) $2/e$ (b) $1/e$
(c) e (d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$ then $\frac{dy}{dx}$ is (a) 2, 3 (b) 3, 2 (c) 2, 3/2 (d) constant

51. If $(1-y^2)\frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is (a) $\frac{1}{y^2-1}$ (b) $\frac{1}{\sqrt{y^2-1}}$ (c) $\frac{1}{1-y^2}$ (d) $\frac{1}{\sqrt{1-y^2}}$

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$ where $a, b, c \in \mathbb{R}$ and $a : b : c$ is (a) 3 : 2 : 1 (b) 1 : 3 : 2 (c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is (a) $5/2$ (b) $7/2$ (c) $9/2$ (d) $3/2$

54. The value of $\int_0^1 \left(\frac{x+1}{x^{2/3}-x^{1/3}+1} - \frac{x-1}{x-x^{1/2}}\right) dx$ is (a) 120 (b) 210 (c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is (a) $\log y = kx$ (b) $y = kx$ (c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then y is (a) $y = \frac{1}{x^2}$ (b) $x = \frac{1}{y^2}$ (c) $x = \frac{1}{y}$ (d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then $\frac{d^2x}{dy^2} = c$ (a) $\frac{d^3y}{dx^3} = 0$ (b) $\frac{d^2x}{dy^2} = c$ (c) $\frac{d^3x}{dy^3} = 0$ (d) constant

58. $\int e^{\log(\tan x)} dx$ is (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$ (c) $\tan x + c$ (d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then $\int f(x) dx$ is (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$ (c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

60. If $\int \frac{2^x}{\sqrt{1-4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then K is (a) $\log 2$ (b) $\frac{1}{2} \log 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

61. The domain of $y = \sqrt{2x^3 - 9x^2 + 12x + 4}$ is (a) $-1 < x < 1$ (b) $0 < x < 2$ (c) $x > 3$ (d) $1 < x < 2$

62. The value of $\frac{\log x}{x}$ at $x = e$ is (a) $2/e$ (b) $1/e$ (c) e (d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$

(a) 2, 3 (b) 3, 2

(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is

(a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$

(c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$

where $a, b, c \in \mathbb{R}$ and $a : b : c =$

(a) 3 : 2 : 1 (b) 1 : 3 : 2

(c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is

(a) $5/2$ (b) $7/2$

(c) $9/2$ (d) $3/2$

54. $\left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x - x^{1/2}}\right)^{10}$ is a polynomial of degree

(a) 120 (b) 210

(c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is

(a) $\log y = kx$ (b) $y = kx$

(c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then $y =$

(a) $y = \frac{1}{x^2}$

(b) $x = \frac{1}{y^2}$

(c) $x = \frac{1}{y}$

(d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then $\frac{d^2x}{dy^2} = c$

(a) $\frac{d^3y}{dx^3} = 0$

(b) $\frac{d^2x}{dy^2} = c$

(c) $\frac{d^3x}{dy^3} = 0$

(d) constant

58. $\int e^{\log(\tan x)} dx =$

(a) $\log(\tan x) + c$

(b) $\log(\sec x) + c$

(c) $\tan x + c$

(d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then

$\int f(x) dx =$

(a) $\tan \frac{x}{2} + c$

(b) $x + \tan \frac{x}{2} + c$

(c) $x - \frac{1}{2} \tan \frac{x}{2} + c$

(d) $x - \tan \frac{x}{2} + c$

60. If $\int \frac{2^x}{\sqrt{1 - 4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then $K =$

(a) $\log 2$

(b) $\frac{1}{2} \log 2$

(c) $\frac{1}{2}$

(d) $\frac{1}{\log 2}$

61. If $2x^3 - 9x^2 + 12x + 4 = 0$ then the domain is

(a) $-1 < x < 1$

(b) $0 < x < 2$

(c) $x > 3$

(d) $1 < x < 2$

62. $\frac{\log x}{x}$ has a maximum at $x =$

(a) $2/e$

(b) $1/e$

(c) e

(d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

- (a) $9/2$ (b) $7/2$
(c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$ then $\frac{dy}{dx}$ is (a) 2, 3 (b) 3, 2 (c) 2, 3/2 (d) constant

- (a) 2, 3 (b) 3, 2
(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is (a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$ (c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

(a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$
(c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$ where $a, b, c \in \mathbb{R}$ then $a : b : c$ is (a) 3 : 2 : 1 (b) 1 : 3 : 2 (c) 3 : 1 : 2 (d) 1 : 2 : 3

- (a) 3 : 2 : 1 (b) 1 : 3 : 2
(c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is (a) $5/2$ (b) $7/2$ (c) $9/2$ (d) $3/2$

- (a) $5/2$ (b) $7/2$
(c) $9/2$ (d) $3/2$

54. $\int \left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x - x^{1/2}} \right) dx$ is (a) 120 (b) 210 (c) 310 (d) 4

- (a) 120 (b) 210
(c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is (a) $\log y = kx$ (b) $y = kx$ (c) $xy = k$ (d) $y = k \log x$

- (a) $\log y = kx$ (b) $y = kx$
(c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then y is (a) $y = \frac{1}{x^2}$ (b) $x = \frac{1}{y^2}$ (c) $x = \frac{1}{y}$ (d) $y = \frac{1}{x}$

- (a) $y = \frac{1}{x^2}$ (b) $x = \frac{1}{y^2}$
(c) $x = \frac{1}{y}$ (d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then $\frac{d^2x}{dy^2} = c$ (a) $\frac{d^3y}{dx^3} = 0$ (b) $\frac{d^2x}{dy^2} = c$ (c) $\frac{d^3x}{dy^3} = 0$ (d) constant

- (a) $\frac{d^3y}{dx^3} = 0$ (b) $\frac{d^2x}{dy^2} = c$
(c) $\frac{d^3x}{dy^3} = 0$ (d) constant

58. $\int e^{\log(\tan x)} dx$ is (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$ (c) $\tan x + c$ (d) $e^{\tan x} + c$

- (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$
(c) $\tan x + c$ (d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then $\int f(x) dx$ is (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$ (c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

- (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$
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60. If $\int \frac{2^x}{\sqrt{1 - 4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then K is (a) $\log 2$ (b) $\frac{1}{2} \log 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

- (a) $\log 2$ (b) $\frac{1}{2} \log 2$
(c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

61. If $2x^3 - 9x^2 + 12x + 4 = 0$ then x is (a) $-1 < x < 1$ (b) $0 < x < 2$ (c) $x > 3$ (d) $1 < x < 2$

- (a) $-1 < x < 1$ (b) $0 < x < 2$
(c) $x > 3$ (d) $1 < x < 2$

62. If $\frac{\log x}{x}$ is maximum then x is (a) $2/e$ (b) $1/e$ (c) e (d) 1

- (a) $2/e$ (b) $1/e$
(c) e (d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

- (a) $9/2$ (b) $7/2$
(c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$ then $\frac{dy}{dx}$ is (a) 2, 3 (b) 3, 2 (c) 2, 3/2 (d) constant

- (a) 2, 3 (b) 3, 2
(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is (a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$ (c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

(a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$
(c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$ where $a, b, c \in \mathbb{R}$ and $a : b : c$ is (a) 3 : 2 : 1 (b) 1 : 3 : 2 (c) 3 : 1 : 2 (d) 1 : 2 : 3

- (a) 3 : 2 : 1 (b) 1 : 3 : 2
(c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{y}{z}$ is (a) $5/2$ (b) $7/2$ (c) $9/2$ (d) $3/2$

- (a) $5/2$ (b) $7/2$
(c) $9/2$ (d) $3/2$

54. The value of $\int_0^1 \left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x-x^{1/2}} \right) dx$ is (a) 120 (b) 210 (c) 310 (d) 4

- (a) 120 (b) 210
(c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is (a) $\log y = kx$ (b) $y = kx$ (c) $xy = k$ (d) $y = k \log x$

- (a) $\log y = kx$ (b) $y = kx$
(c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then y is (a) $y = \frac{1}{x^2}$ (b) $x = \frac{1}{y^2}$ (c) $x = \frac{1}{y}$ (d) $y = \frac{1}{x}$

- (a) $y = \frac{1}{x^2}$ (b) $x = \frac{1}{y^2}$
(c) $x = \frac{1}{y}$ (d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then $\frac{d^2x}{dy^2} = c$ where c is (a) $\frac{d^3y}{dx^3} = 0$ (b) $\frac{d^2x}{dy^2} = c$ (c) $\frac{d^3x}{dy^3} = 0$ (d) constant

- (a) $\frac{d^3y}{dx^3} = 0$ (b) $\frac{d^2x}{dy^2} = c$
(c) $\frac{d^3x}{dy^3} = 0$ (d) constant

58. $\int e^{\log(\tan x)} dx$ is (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$ (c) $\tan x + c$ (d) $e^{\tan x} + c$

- (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$
(c) $\tan x + c$ (d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then $\int f(x) dx$ is (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$ (c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

- (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$
(c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

60. If $\int \frac{2^x}{\sqrt{1-4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then K is (a) $\log 2$ (b) $\frac{1}{2} \log 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

- (a) $\log 2$ (b) $\frac{1}{2} \log 2$
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61. The domain of $f(x) = 2x^3 - 9x^2 + 12x + 4$ is (a) $-1 < x < 1$ (b) $0 < x < 2$ (c) $x > 3$ (d) $1 < x < 2$

- (a) $-1 < x < 1$ (b) $0 < x < 2$
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62. The value of $\frac{\log x}{x}$ at $x = e$ is (a) $2/e$ (b) $1/e$ (c) e (d) 1

- (a) $2/e$ (b) $1/e$
(c) e (d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$

(a) 2, 3 (b) 3, 2

(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is

(a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$

(c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$

where $a, b, c \in \mathbb{R}$ and $a : b : c =$

(a) 3 : 2 : 1 (b) 1 : 3 : 2

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53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dz}{dx} =$

(a) $5/2$ (b) $7/2$

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54. $\int \left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x - x^{1/2}} \right) dx$ is

(a) 120 (b) 210

(c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is

(a) $\log y = kx$ (b) $y = kx$

(c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then $y =$

(a) $y = \frac{1}{x^2}$

(b) $x = \frac{1}{y^2}$

(c) $x = \frac{1}{y}$

(d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then $\frac{d^2x}{dy^2} = c$

(a) $\frac{d^3y}{dx^3} = 0$

(b) $\frac{d^2x}{dy^2} = c$

(c) $\frac{d^3x}{dy^3} = 0$

(d) constant

58. $\int e^{\log(\tan x)} dx =$

(a) $\log(\tan x) + c$

(b) $\log(\sec x) + c$

(c) $\tan x + c$

(d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then

$\int f(x) dx =$

(a) $\tan \frac{x}{2} + c$

(b) $x + \tan \frac{x}{2} + c$

(c) $x - \frac{1}{2} \tan \frac{x}{2} + c$

(d) $x - \tan \frac{x}{2} + c$

60. If $\int \frac{2^x}{\sqrt{1 - 4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then $K =$

(a) $\log 2$

(b) $\frac{1}{2} \log 2$

(c) $\frac{1}{2}$

(d) $\frac{1}{\log 2}$

61. If $2x^3 - 9x^2 + 12x + 4 = 0$ then the roots are

(a) $-1 < x < 1$

(b) $0 < x < 2$

(c) $x > 3$

(d) $1 < x < 2$

62. $\frac{\log x}{x}$ is maximum at $x =$

(a) $2/e$

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(c) e

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49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$

(a) 2, 3 (b) 3, 2

(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is (a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$ (c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

(Integrating factor)

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$ where $a, b, c \in \mathbb{R}$ and $a : b : c =$ (a) 3 : 2 : 1 (b) 1 : 3 : 2 (c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is (a) $5/2$ (b) $7/2$ (c) $9/2$ (d) $3/2$

54. $\left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x - x^{1/2}}\right)^{10}$ is a polynomial of degree (a) 120 (b) 210 (c) 310 (d) 4

is

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is (a) $\log y = kx$ (b) $y = kx$ (c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then (a) $y = \frac{1}{x^2}$ (b) $x = \frac{1}{y^2}$ (c) $x = \frac{1}{y}$ (d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then (a) $\frac{d^3y}{dx^3} = 0$ (b) $\frac{d^2x}{dy^2} = c$ (c) $\frac{d^3x}{dy^3} = 0$ (d) constant

58. $\int e^{\log(\tan x)} dx$ is (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$ (c) $\tan x + c$ (d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$ (c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

$\int f(x) dx$ is

60. If $\int \frac{2^x}{\sqrt{1 - 4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then (a) $\log 2$ (b) $\frac{1}{2} \log 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

where K is

61. If $2x^3 - 9x^2 + 12x + 4$ is a factor of $f(x)$ then (a) $-1 < x < 1$ (b) $0 < x < 2$ (c) $x > 3$ (d) $1 < x < 2$

62. $\frac{\log x}{x}$ is maximum at (a) $2/e$ (b) $1/e$ (c) e (d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$ then $\frac{dy}{dx}$ is (a) 2, 3 (b) 3, 2 (c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is (a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$ (c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$ where $a, b, c \in \mathbb{R}$ and $a : b : c =$ (a) 3 : 2 : 1 (b) 1 : 3 : 2 (c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is (a) $5/2$ (b) $7/2$ (c) $9/2$ (d) $3/2$

54. $\int \left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x - x^{1/2}} \right) dx$ is (a) 120 (b) 210 (c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is (a) $\log y = kx$ (b) $y = kx$ (c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then y is (a) $y = \frac{1}{x^2}$ (b) $x = \frac{1}{y^2}$ (c) $x = \frac{1}{y}$ (d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then $\frac{d^2x}{dy^2} = c$ (a) $\frac{d^3y}{dx^3} = 0$ (b) $\frac{d^2x}{dy^2} = c$ (c) $\frac{d^3x}{dy^3} = 0$ (d) constant

58. $\int e^{\log(\tan x)} dx$ is (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$ (c) $\tan x + c$ (d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then $\int f(x) dx$ is (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$ (c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

60. If $\int \frac{2^x}{\sqrt{1 - 4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then K is (a) $\log 2$ (b) $\frac{1}{2} \log 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

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50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$ then $\frac{dy}{dx}$ is (a) 2, 3 (b) 3, 2 (c) 2, 3/2 (d) constant

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(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is (a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$ (c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

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53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is (a) $5/2$ (b) $7/2$ (c) $9/2$ (d) $3/2$

- (a) $5/2$ (b) $7/2$
(c) $9/2$ (d) $3/2$

54. The value of $\int_0^1 \left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x-x^{1/2}} \right) dx$ is (a) 120 (b) 210 (c) 310 (d) 4

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(c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is (a) $\log y = kx$ (b) $y = kx$ (c) $xy = k$ (d) $y = k \log x$

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58. $\int e^{\log(\tan x)} dx =$ (a) $\log(\tan x) + c$ (b) $\log(\sec x) + c$ (c) $\tan x + c$ (d) $e^{\tan x} + c$

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59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then $\int f(x) dx =$ (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$ (c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

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60. If $\int \frac{2^x}{\sqrt{1-4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then $K =$ (a) $\log 2$ (b) $\frac{1}{2} \log 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

- (a) $\log 2$ (b) $\frac{1}{2} \log 2$
(c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

61. The domain of $f(x) = 2x^3 - 9x^2 + 12x + 4$ is (a) $-1 < x < 1$ (b) $0 < x < 2$ (c) $x > 3$ (d) $1 < x < 2$

- (a) $-1 < x < 1$ (b) $0 < x < 2$
(c) $x > 3$ (d) $1 < x < 2$

62. The value of $\frac{\log x}{x}$ at $x = e$ is (a) $2/e$ (b) $1/e$ (c) e (d) 1

- (a) $2/e$ (b) $1/e$
(c) e (d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$

(a) 2, 3 (b) 3, 2

(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is (a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$ (c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

(Integrating factor)

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$ where $a, b, c \in \mathbb{R}$ and $a : b : c =$ (a) 3 : 2 : 1 (b) 1 : 3 : 2 (c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is (a) $5/2$ (b) $7/2$ (c) $9/2$ (d) $3/2$

54. $\left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x - x^{1/2}}\right)^{10}$ is a polynomial of degree (a) 120 (b) 210 (c) 310 (d) 4

is

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is (a) $\log y = kx$ (b) $y = kx$ (c) $xy = k$ (d) $y = k \log x$

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61. If $2x^3 - 9x^2 + 12x + 4$ is a perfect square then x is (a) $-1 < x < 1$ (b) $0 < x < 2$ (c) $x > 3$ (d) $1 < x < 2$

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- (a) $\tan \frac{x}{2} + c$ (b) $x + \tan \frac{x}{2} + c$
(c) $x - \frac{1}{2} \tan \frac{x}{2} + c$ (d) $x - \tan \frac{x}{2} + c$

60. If $\int \frac{2^x}{\sqrt{1 - 4^x}} dx = K \cdot \sin^{-1}(2^x) + c$ then K is (a) $\log 2$ (b) $\frac{1}{2} \log 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log 2}$

- (a) $\log 2$ (b) $\frac{1}{2} \log 2$
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61. The domain of $f(x) = 2x^3 - 9x^2 + 12x + 4$ is (a) $-1 < x < 1$ (b) $0 < x < 2$ (c) $x > 3$ (d) $1 < x < 2$

- (a) $-1 < x < 1$ (b) $0 < x < 2$
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62. The value of $\frac{\log x}{x}$ at $x = e$ is (a) $2/e$ (b) $1/e$ (c) e (d) 1

- (a) $2/e$ (b) $1/e$
(c) e (d) 1

49. If $y = 2x - x^2$ then $\frac{dy}{dx}$ is (a) $9/2$ (b) $7/2$ (c) $5/2$ (d) $3/2$

50. If $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^{2/3}$

(a) 2, 3 (b) 3, 2

(c) 2, 3/2 (d) constant

51. If $(1 - y^2) \frac{dx}{dy} + yx = ay$ ($-1 < y < 1$) then the integrating factor is

(a) $\frac{1}{y^2 - 1}$ (b) $\frac{1}{\sqrt{y^2 - 1}}$

(c) $\frac{1}{1 - y^2}$ (d) $\frac{1}{\sqrt{1 - y^2}}$

52. If $x^2 + 2x + 3 = 0$ then $ax^2 + bx + c = 0$

where $a, b, c \in \mathbb{R}$ and $a : b : c =$

(a) 3 : 2 : 1 (b) 1 : 3 : 2

(c) 3 : 1 : 2 (d) 1 : 2 : 3

53. If $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ then $\frac{dx}{dz}$ is

(a) $5/2$ (b) $7/2$

(c) $9/2$ (d) $3/2$

54. $\left(\frac{x+1}{x^{2/3} - x^{1/3} + 1} - \frac{x-1}{x - x^{1/2}}\right)^{10}$ is a polynomial of degree

(a) 120 (b) 210

(c) 310 (d) 4

55. If $\frac{dy}{dx} = \frac{y}{x}$ then the solution is

(a) $\log y = kx$ (b) $y = kx$

(c) $xy = k$ (d) $y = k \log x$

56. If $\frac{dy}{dx} + \frac{2y}{x} = 0$ and $y(1) = 1$ then $y =$

(a) $y = \frac{1}{x^2}$

(b) $x = \frac{1}{y^2}$

(c) $x = \frac{1}{y}$

(d) $y = \frac{1}{x}$

57. If $\frac{d^3y}{dx^3} = 0$ then $\frac{d^2x}{dy^2} = c$

(a) $\frac{d^3y}{dx^3} = 0$

(b) $\frac{d^2x}{dy^2} = c$

(c) $\frac{d^3x}{dy^3} = 0$

(d) constant

58. $\int e^{\log(\tan x)} dx =$

(a) $\log(\tan x) + c$

(b) $\log(\sec x) + c$

(c) $\tan x + c$

(d) $e^{\tan x} + c$

59. If $f(x) = \cos x - \cos^2 x + \cos^3 x - \dots \infty$ then

$\int f(x) dx =$

(a) $\tan \frac{x}{2} + c$

(b) $x + \tan \frac{x}{2} + c$

(c) $x - \frac{1}{2} \tan \frac{x}{2} + c$

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(a) $\log 2$

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(a) $2/e$

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(c) e

(d) 1

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72. If $a_n = \sum_{r=0}^n \frac{1}{{}^n C_r}$ then $\sum_{r=0}^n \frac{r}{{}^n C_r}$ is equal to:
 (a) $(n - 1) a_n$ (b) $n a_n$
 (c) $\frac{1}{2} n a_n$ (d) none
73. If ω is an imaginary cube root of unity then $(1 + \omega - \omega^2)^7$ equal to:
 (a) 128ω (b) -128ω
 (c) $128 \omega^2$ (d) $-128 \omega^2$
74. If $P(A) = 3/8$, $P(B) = 1/2$ and $P(A \cap B) = 1/4$ then value of $P\left(\frac{\bar{A}}{\bar{B}}\right)$ is:
 (a) $3/5$ (b) $3/4$
 (c) $1/4$ (d) $1/5$
75. If the letters of the word ATTRACTION are written down at random, then the probability that all the T's occurs together:
 (a) $1/5$ (b) $3/14$
 (c) $1/15$ (d) $2/15$
76. One bag contains 4 white and 5 black balls. Another bag contains 6 white and 7 black balls. A ball is transferred from first bag to the second bag and then a ball is drawn from the second bag. Then the probability that the ball drawn is white.
 (a) $\frac{35}{65}$ (b) $\frac{29}{63}$
 (c) $\frac{13}{63}$ (d) $\frac{17}{63}$
77. Suppose that 5% of men and 0.25% of women have grey hair. A grey haired person is selected at random. What is the probability of this person being male assume that there are equal number of male and female:
 (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
 (c) $\frac{13}{21}$ (d) $\frac{17}{21}$

63. If a and b are non zero roots of $x^2 + ax + b = 0$ then least value of $x^2 + ax + b$ is:
 (a) $2/3$ (b) $-9/4$
 (c) $9/4$ (d) 1
64. If the angles of elevation of the top of a tower from three collinear points A, B and C on a line leading to the foot of the tower are 30° , 45° and 60° respectively, then the ratio of AB : BC is:
 (a) $1 : \sqrt{3}$ (b) $2 : 3$
 (c) $\sqrt{3} : 1$ (d) $\sqrt{3} : \sqrt{2}$
65. $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)(3 + \cos x)}{x \tan 4x}$ is equal to:
 (a) 2 (b) $1/2$
 (c) 4 (d) 3
66. The sum of coefficients of integral powers of x in the binomial expansion of $(1 - 2\sqrt{x})^{50}$ is:
 (a) $\frac{1}{2}(3^{50} - 1)$ (b) $\frac{1}{2}(2^{50} + 1)$
 (c) $\frac{1}{2}(3^{50} + 1)$ (d) $\frac{1}{2}(3^{50})$
67. Let $y(x)$ be the solution of the differential equations $(x \log x) \cdot \frac{dy}{dx} + y = 2x \log x$, ($x \geq 1$) then $y(e)$ is equal to:
 (a) 2 (b) $2e$
 (c) e (d) 0
68. If m is A.M of two distinct real numbers l and n , ($l, n > 1$) and G_1, G_2 and G_3 are three geometric means between l and n , then $G_1^4 + 2G_2^4 + G_3^4$ equals:
 (a) $4lmn^2$ (b) $4l^2m^2n^2$
 (c) $4l^2mn$ (d) $4lm^2n$
69. If in a triangle PQR, $\sin P, \sin Q, \sin R$ are in A.P, then:
 (a) the altitudes are in A.P
 (b) the altitudes are in H.P
 (c) the medians are in G.P
 (d) the median are in A.P
70. Seven white balls and three black balls are randomly placed in a row. The probability that no two black balls are placed adjacently equals.
 (a) $1/2$ (b) $7/15$
 (c) $2/15$ (d) $1/3$
71. The number of common tangents to the circle's $x^2 + y^2 = 4$ and $x^2 + y^2 - 6x - 8y - 24 = 0$ is:
 (a) 0 (b) 1
 (c) 3 (d) 4
72. If $a_n = \sum_{r=0}^n \frac{1}{{}^n C_r}$ then $\sum_{r=0}^n \frac{r}{{}^n C_r}$ is equal to:
 (a) $(n - 1) a_n$ (b) $n a_n$
 (c) $\frac{1}{2} n a_n$ (d) none
73. If ω is an imaginary cube root of unity then $(1 + \omega - \omega^2)^7$ equal to:
 (a) 128ω (b) -128ω
 (c) $128 \omega^2$ (d) $-128 \omega^2$
74. If $P(A) = 3/8$, $P(B) = 1/2$ and $P(A \cap B) = 1/4$ then value of $P\left(\frac{\bar{A}}{\bar{B}}\right)$ is:
 (a) $3/5$ (b) $3/4$
 (c) $1/4$ (d) $1/5$
75. If the letters of the word ATTRACTION are written down at random, then the probability that all the T's occurs together:
 (a) $1/5$ (b) $3/14$
 (c) $1/15$ (d) $2/15$
76. One bag contains 4 white and 5 black balls. Another bag contains 6 white and 7 black balls. A ball is transferred from first bag to the second bag and then a ball is drawn from the second bag. Then the probability that the ball drawn is white.
 (a) $\frac{35}{65}$ (b) $\frac{29}{63}$
 (c) $\frac{13}{63}$ (d) $\frac{17}{63}$
77. Suppose that 5% of men and 0.25% of women have grey hair. A grey haired person is selected at random. What is the probability of this person being male assume that there are equal number of male and female:
 (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
 (c) $\frac{13}{21}$ (d) $\frac{17}{21}$

63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

- (a) $2/3$ (b) $-9/4$
(c) $9/4$ (d) 1

64. ; fn fdl h ehukj ds "krlz dk mlu; u dsk rhu l j[k fcln/ka A, B rFkk C l stks ehukj ds vk/kkj dh vkj gñ "k%30°, 45° rFkk 60° gS rks AB : BC vuqkr g&

- (a) $1 : \sqrt{3}$ (b) $2 : 3$
(c) $\sqrt{3} : 1$ (d) $\sqrt{3} : \sqrt{2}$

65. $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)(3 + \cos x)}{x \tan 4x}$ cjkj gksk&

- (a) 2 (b) $1/2$
(c) 4 (d) 3

66. $(1 - 2\sqrt{x})^{50}$ ds }in folrj ea x ds iwkkd ?krka ds xqkkkka dk ; ksx g&

- (a) $\frac{1}{2}(3^{50} - 1)$ (b) $\frac{1}{2}(2^{50} + 1)$
(c) $\frac{1}{2}(3^{50} + 1)$ (d) $\frac{1}{2}(3^{50})$

67. ekuk $y(x)$ vody l ehdj .k

$(x \log x) \cdot \frac{dy}{dx} + y = 2x \log x, (x \geq 1)$ dk gy gS rks $y(e)$ cjkj gksk&

- (a) 2 (b) $2e$
(c) e (d) 0

68. ; fn m nks fHku okLrfod l ; kvka l rFkk n, ($l, n > 1$) dk l ekurj ek; gS G_1, G_2, \dots, G_3 l rFkk n dse/; xqkkkij ek; gS rks $G_1^4 + 2G_2^4 + G_3^4$ cjkj gksk&

- (a) $4lmn^2$ (b) $4l^2m^2n^2$
(c) $4l^2mn$ (d) $4lm^2n$

69. , d f=Hkt PQR eñ $\sin P, \sin Q, \sin R$ l ekurj Jskh ea gñ rks&

- (a) yEc l ekurj Jskh ea gksa
(b) yEc gjkRed Jskh ea gksa
(c) ekf/; dk, i xqkkkij Jskh ea gñ
(d) ekf/; dk, i l ekurj Jskh ea gñ

70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j[kh tkrh gñbl ckr dh D; k i kf; drk gSfd nks dkyh xns , d l kFk u vk; ð

- (a) $1/2$ (b) $7/15$
(c) $2/15$ (d) $1/3$

71. oUlka $x^2 + y^2 = 4$ rFkk $x^2 + y^2 - 6x - 8y - 24 = 0$ ij [kph xbl mHk; fu'B Li "kj ; kvka dh l ; k gksk&

- (a) 0 (b) 1
(c) 3 (d) 4

72. ; fn $a_n = \sum_{r=0}^n \frac{1}{{}^nC_r}$ rks $\sum_{r=0}^n \frac{r}{{}^nC_r}$ gksk&

- (a) $(n - 1) a_n$ (b) $n a_n$
(c) $\frac{1}{2} n a_n$ (d) dkbz ugha

73. ; fn ω bdkbz dk dkyfud ?kueny gS rks $(1 + \omega - \omega^2)^7$ cjkj gksk&

- (a) 128ω (b) -128ω
(c) $128\omega^2$ (d) $-128\omega^2$

74. ; fn $P(A) = 3/8, P(B) = 1/2$ rFkk $P(A \cap B) = 1/4$

rks $P\left(\frac{\bar{A}}{\bar{B}}\right)$ dk eku g&

- (a) $3/5$ (b) $3/4$
(c) $1/4$ (d) $1/5$

75. ; fn "kOn ATTRACTION ds v{kj kadksfy [k tk; s rksbl ckr dh D; k i kf; drk gksk fd l Hkh 'T', d l kFk vk; ð

- (a) $1/5$ (b) $3/14$
(c) $1/15$ (d) $2/15$

76. , d c& ea 4 l On rFkk 5 dkyh xns gñ nñ jsc& ea 6 l On rFkk 7 dkyh xns gñ A, d xan i fke c& l snñ jsc& ea Mkyh tkrh gS rksbl ckr dh D; k i kf; drk gksk fd fudkyh tkus okyh xan l On gk&

- (a) $\frac{35}{65}$ (b) $\frac{29}{63}$
(c) $\frac{13}{63}$ (d) $\frac{17}{63}$

77. ekuk fd 5% vknfe; ka rFkk 0.25% vksrka ds Hkjs cky gñ , d Hkjs cky okys 0; fDr dks ; nPN; k pñk tkrk gSbl ckr dh D; k i kf; drk gSfd ; g 0; fDr vknesh gks tcfD ; g ekuk tkrk gS fd vknfe; ka vksrka dh l ; k cjkj gñ

- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
(c) $\frac{13}{21}$ (d) $\frac{7}{21}$

63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

- (a) $2/3$ (b) $-9/4$
(c) $9/4$ (d) 1

64. ; fn fd l h ehukj ds "kñkz dk mlu; u dsk rhu l j[k fclnq;ka A, B rFkk C l s tks ehukj ds vk/kkj dh vkj gñ "kñkz $30^\circ, 45^\circ$ rFkk 60° gñ rks $AB : BC$ vuq kr g&

- (a) $1 : \sqrt{3}$ (b) $2 : 3$
(c) $\sqrt{3} : 1$ (d) $\sqrt{3} : \sqrt{2}$

65. $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)(3 + \cos x)}{x \tan 4x}$ cjkj gksk&

- (a) 2 (b) $1/2$
(c) 4 (d) 3

66. $(1 - 2\sqrt{x})^{50}$ ds f}in folr kj ea x ds iwkkñkñ ?krka ds xqkkñkñ dk ; ksx g&

- (a) $\frac{1}{2}(3^{50} - 1)$ (b) $\frac{1}{2}(2^{50} + 1)$
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67. ekuk $y(x)$ vody l ehdj .k

$(x \log x) \cdot \frac{dy}{dx} + y = 2x \log x, (x \geq 1)$ dk gy gñ rks $y(e)$ cjkj gksk&

- (a) 2 (b) $2e$
(c) e (d) 0

68. ; fn m nks fHku okLrfod l q; kvka l rFkk n, ($l, n > 1$) dk l ekurj ek; gñ G_1, G_2, \dots, G_3 l rFkk n dse/; xqkkñkñ ek; gñ rks $G_1^4 + 2G_2^4 + G_3^4$ cjkj gksk&

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69. , d f=Hkt PQR eñ $\sin P, \sin Q, \sin R$ l ekurj Js kh ea gñ rks&

- (a) yEc l ekurj Js kh ea gñ
(b) yEc gjkRed Js kh ea gñ
(c) ekf/; dk, i xqkkñkñ Js kh ea gñ
(d) ekf/; dk, i l ekurj Js kh ea gñ

70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j [kh tkrh gñ bl ckr dh D; k i kf; drk gñfd nks dkyh xns , d l kf u vk; ð

- (a) $1/2$ (b) $7/15$
(c) $2/15$ (d) $1/3$

71. oUlka $x^2 + y^2 = 4$ rFkk $x^2 + y^2 - 6x - 8y - 24 = 0$ ij [kph xbl mHk; fu'B Li "kj s kvka dh l q; k gksk&

- (a) 0 (b) 1
(c) 3 (d) 4

72. ; fn $a_n = \sum_{r=0}^n \frac{1}{{}^nC_r}$ rks $\sum_{r=0}^n \frac{r}{{}^nC_r}$ gksk&

- (a) $(n - 1) a_n$ (b) $n a_n$
(c) $\frac{1}{2} n a_n$ (d) dkbz ugha

73. ; fn ω bdkbz dk dkyfud ?kueny gñ rks $(1 + \omega - \omega^2)^7$ cjkj gksk&

- (a) 128ω (b) -128ω
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74. ; fn $P(A) = 3/8, P(B) = 1/2$ rFkk $P(A \cap B) = 1/4$

rks $P\left(\frac{\bar{A}}{\bar{B}}\right)$ dk eku g&

- (a) $3/5$ (b) $3/4$
(c) $1/4$ (d) $1/5$

75. ; fn "kñkñ ATTRACTION ds v{kj ka dks fy [k tk; s rks bl ckr dh D; k i kf; drk gñfd l Hkh 'T', d l kf vk; ð

- (a) $1/5$ (b) $3/14$
(c) $1/15$ (d) $2/15$

76. , d cñ ea 4 l On rFkk 5 dkyh xns gñ nñ jscñ ea 6 l On rFkk 7 dkyh xns gñ A, d xñ i fke cñ l snñ jscñ ea Mkyh tkrh gñ rks bl ckr dh D; k i kf; drk gñfd fudkyh tkus okyh xñ l On gk&

- (a) $\frac{35}{65}$ (b) $\frac{29}{63}$
(c) $\frac{13}{63}$ (d) $\frac{17}{63}$

77. ekuk fd 5% vknfe; ka rFkk 0.25% vñ rka ds Hkjs cky gñ , d Hkjs cky okys 0; fDr dks ; nPN; k pñk tkrk gñ bl ckr dh D; k i kf; drk gñfd ; g 0; fDr vknf gñ tcf; ; g ekuk tkrk gñfd vknfe; ka vñ vñ rka dh l q; k cjkj gñ

- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
(c) $\frac{13}{21}$ (d) $\frac{7}{21}$

63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

- (a) $2/3$ (b) $-9/4$
(c) $9/4$ (d) 1

64. ; fn fd l h ehukj ds "kñkz dk mlu; u dsk rhu l j [k fclnq; ka A, B rFkk C l s t k ehukj ds vk/kkj dh vkj gñ "kñkz $30^\circ, 45^\circ$ rFkk 60° gñ rks $AB : BC$ vuñ kr g&

- (a) $1 : \sqrt{3}$ (b) $2 : 3$
(c) $\sqrt{3} : 1$ (d) $\sqrt{3} : \sqrt{2}$

65. $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)(3 + \cos x)}{x \tan 4x}$ cjkj gksk&

- (a) 2 (b) $1/2$
(c) 4 (d) 3

66. $(1 - 2\sqrt{x})^{50}$ ds f}in folrñj ea x ds iwkkñd ?krka ds xqkkñk dk ; ksx g&

- (a) $\frac{1}{2}(3^{50} - 1)$ (b) $\frac{1}{2}(2^{50} + 1)$
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$(x \log x) \cdot \frac{dy}{dx} + y = 2x \log x, (x \geq 1)$ dk gy gñ rks $y(e)$ cjkj gksk&

- (a) 2 (b) $2e$
(c) e (d) 0

68. ; fn m nks fñku oklrfod l ã; kvka l rFkk n, $(l, n > 1)$ dk l ekñrj ek; gñ G_1, G_2, \dots, G_3 l rFkk n dse/; xqkkñk ek; gñ rks $G_1^4 + 2G_2^4 + G_3^4$ cjkj gksk&

- (a) $4lmn^2$ (b) $4l^2m^2n^2$
(c) $4l^2mn$ (d) $4lm^2n$

69. , d f=ñkñ PQR eñ $\sin P, \sin Q, \sin R$ l ekñrj Js kh ea gñ rks&

- (a) yEc l ekñrj Js kh ea gñ
(b) yEc gjkñed Js kh ea gñ
(c) ekf/; dk, i xqkkñk Js kh ea gñ
(d) ekf/; dk, i l ekñrj Js kh ea gñ

70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j [kh tkrh gñ bl ckr dh D; k i kf; drk gñfd nks dkyh xns , d l kf u vk; ã

- (a) $1/2$ (b) $7/15$
(c) $2/15$ (d) $1/3$

71. oUlka $x^2 + y^2 = 4$ rFkk $x^2 + y^2 - 6x - 8y - 24 = 0$ ij [kph xbl mñk; fu'B Li "kj [kvka dh l ã; k gksk&

- (a) 0 (b) 1
(c) 3 (d) 4

72. ; fn $a_n = \sum_{r=0}^n \frac{1}{{}^nC_r}$ rks $\sum_{r=0}^n \frac{r}{{}^nC_r}$ gksk&

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(c) $\frac{1}{2} n a_n$ (d) dkbz ugha

73. ; fn ω bdkbz dk dkñifud ?kueny gñ rks $(1 + \omega - \omega^2)^7$ cjkj gksk&

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74. ; fn $P(A) = 3/8, P(B) = 1/2$ rFkk $P(A \cap B) = 1/4$

rks $P\left(\frac{\bar{A}}{B}\right)$ dk eku g&

- (a) $3/5$ (b) $3/4$
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75. ; fn "kñ ATTRACTION ds v{kñ kdksfy [k tk; s rksbl ckr dh D; k i kf; drk gñfd l Hñ 'T', d l kf vk; ã

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76. , d cñ ea 4 l On rFkk 5 dkyh xns gñ nñ jscñ ea 6 l On rFkk 7 dkyh xns gñ A, d xñ i fke cñ l snñ jscñ ea Mkyh tkrh gñ rksbl ckr dh D; k i kf; drk gñfd fudkyh tkus okyh xñ l On gñ

- (a) $\frac{35}{65}$ (b) $\frac{29}{63}$
(c) $\frac{13}{63}$ (d) $\frac{17}{63}$

77. ekuk fd 5% vñfe; ka rFkk 0.25% vñrka ds Hñjs cky gñ , d Hñjs cky okys 0; fDr dks ; nPN; k pñk tkrk gñbl ckr dh D; k i kf; drk gñfd ; g 0; fDr vñeh gñ tcf; ; g ekuk tkrk gñfd vñfe; ka vñj vñrka dh l ã; k cjkj gñ

- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
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63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

- (a) $2/3$ (b) $-9/4$
(c) $9/4$ (d) 1

64. ; fn fdl h ehukj ds "kñkz dk mlu; u dsk rhu l j[k fclnq;ka A, B rFkk C l stks ehukj ds vk/kkj dh vkj gñ "kñkz $30^\circ, 45^\circ$ rFkk 60° gñ rks $AB : BC$ vuqkr g&

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- (a) 2 (b) $2e$
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68. ; fn m nks fHku okLrfod l q; kvka l rFkk n, ($l, n > 1$) dk l ekurj ek; gñ G_1, G_2, \dots, G_3 l rFkk n dse/; xqkkñkñ ek; gñ rks $G_1^4 + 2G_2^4 + G_3^4$ cjkj gksk&

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- (a) yEc l ekurj Jskh ea gñ
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(c) ekf/; dk, i xqkkñkñ Jskh ea gñ
(d) ekf/; dk, i l ekurj Jskh ea gñ

70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j[kh tkrh gñ bl ckr dh D; k i kf; drk gñfd nks dkyh xns , d l kf u vk; ð

- (a) $1/2$ (b) $7/15$
(c) $2/15$ (d) $1/3$

71. oUlka $x^2 + y^2 = 4$ rFkk $x^2 + y^2 - 6x - 8y - 24 = 0$ ij [kph xbl mHk; fu'B Li "kj ð kvka dh l q; k gksk&

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73. ; fn ω bdkbz dk dkYifud ?kueny gñ rks $(1 + \omega - \omega^2)^7$ cjkj gksk&

- (a) 128ω (b) -128ω
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rks $P\left(\frac{\bar{A}}{\bar{B}}\right)$ dk eku g&

- (a) $3/5$ (b) $3/4$
(c) $1/4$ (d) $1/5$

75. ; fn "kñ ATTRACTION ds v{kj ka dksfy [k tk; s rksbl ckr dh D; k i kf; drk gñfd l Hkh 'T', d l kf vk; ð

- (a) $1/5$ (b) $3/14$
(c) $1/15$ (d) $2/15$

76. , d cñ ea 4 l On rFkk 5 dkyh xns gñ nñ jscñ ea 6 l On rFkk 7 dkyh xns gñ A, d xñ i fke cñ l snñ jscñ ea Mkyh tkrh gñ rksbl ckr dh D; k i kf; drk gñfd fudkyh tkus okyh xñ l On gñ

- (a) $\frac{35}{65}$ (b) $\frac{29}{63}$
(c) $\frac{13}{63}$ (d) $\frac{17}{63}$

77. ekuk fd 5% vknfe; ka rFkk 0.25% vñ rka ds Hkjs cky gñ , d Hkjs cky okys 0; fDr dks ; nPN; k pñk tkrk gñbl ckr dh D; k i kf; drk gñfd ; g 0; fDr vknf gñ tcf; ; g ekuk tkrk gñfd vknfe; ka vñ vñ rka dh l q; k cjkj gñ

- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
(c) $\frac{13}{21}$ (d) $\frac{7}{21}$

63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

- (a) $2/3$ (b) $-9/4$
(c) $9/4$ (d) 1

64. ; fn fdl h ehukj ds "krlz dk mlu; u dsk rhu l j[k fcln/ka A, B rFkk C l stks ehukj ds vk/kkj dh vkj gñ "k%30°, 45° rFkk 60° gS rks AB : BC vuqkr g&

- (a) $1 : \sqrt{3}$ (b) $2 : 3$
(c) $\sqrt{3} : 1$ (d) $\sqrt{3} : \sqrt{2}$

65. $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)(3 + \cos x)}{x \tan 4x}$ cjkj gksk&

- (a) 2 (b) $1/2$
(c) 4 (d) 3

66. $(1 - 2\sqrt{x})^{50}$ ds }in folrj ea x ds iwkkd ?krka ds xqkkkka dk ; ksx g&

- (a) $\frac{1}{2}(3^{50} - 1)$ (b) $\frac{1}{2}(2^{50} + 1)$
(c) $\frac{1}{2}(3^{50} + 1)$ (d) $\frac{1}{2}(3^{50})$

67. ekuk $y(x)$ vody l ehdj .k

$(x \log x) \cdot \frac{dy}{dx} + y = 2x \log x, (x \geq 1)$ dk gy gS rks $y(e)$ cjkj gksk&

- (a) 2 (b) $2e$
(c) e (d) 0

68. ; fn m nks fHku okLrfod l d; kvka l rFkk n, ($l, n > 1$) dk l ekurj ek; gS G_1, G_2, \dots, G_3 l rFkk n dse/; xqkkkij ek; gS rks $G_1^4 + 2G_2^4 + G_3^4$ cjkj gksk&

- (a) $4lmn^2$ (b) $4l^2m^2n^2$
(c) $4l^2mn$ (d) $4lm^2n$

69. , d f=Hkt PQR eñ $\sin P, \sin Q, \sin R$ l ekurj Jskh ea gñ rks&

- (a) yEc l ekurj Jskh ea gksa
(b) yEc gjkRed Jskh ea gksa
(c) ekf/; dk, i xqkkkij Jskh ea gñ
(d) ekf/; dk, i l ekurj Jskh ea gñ

70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j[kh tkrh gñbl ckr dh D; k i kf; drk gSfd nks dkyh xns , d l kFk u vk; ð

- (a) $1/2$ (b) $7/15$
(c) $2/15$ (d) $1/3$

71. oUlka $x^2 + y^2 = 4$ rFkk $x^2 + y^2 - 6x - 8y - 24 = 0$ ij [kph xbl mHk; fu'B Li "kj d; kvka dh l d; k gksk&

- (a) 0 (b) 1
(c) 3 (d) 4

72. ; fn $a_n = \sum_{r=0}^n \frac{1}{{}^nC_r}$ rks $\sum_{r=0}^n \frac{r}{{}^nC_r}$ gksk&

- (a) $(n - 1) a_n$ (b) $n a_n$
(c) $\frac{1}{2} n a_n$ (d) dkbz ugha

73. ; fn ω bdkbz dk dkyfud ?kueny gS rks $(1 + \omega - \omega^2)^7$ cjkj gksk&

- (a) 128ω (b) -128ω
(c) $128\omega^2$ (d) $-128\omega^2$

74. ; fn $P(A) = 3/8, P(B) = 1/2$ rFkk $P(A \cap B) = 1/4$

rks $P\left(\frac{\bar{A}}{\bar{B}}\right)$ dk eku g&

- (a) $3/5$ (b) $3/4$
(c) $1/4$ (d) $1/5$

75. ; fn "kOn ATTRACTION ds v{kj kadksfy [k tk; s rksbl ckr dh D; k i kf; drk gksk fd l Hkh 'T', d l kFk vk; ð

- (a) $1/5$ (b) $3/14$
(c) $1/15$ (d) $2/15$

76. , d c& ea 4 l On rFkk 5 dkyh xns gñ nñ jsc& ea 6 l On rFkk 7 dkyh xns gñ A, d xan i Fke c& l snñ jsc& ea Mkyh tkrh gS rksbl ckr dh D; k i kf; drk gksk fd fudkyh tkus okyh xan l On gk&

- (a) $\frac{35}{65}$ (b) $\frac{29}{63}$
(c) $\frac{13}{63}$ (d) $\frac{17}{63}$

77. ekuk fd 5% vknfe; ka rFkk 0.25% vj rka ds Hkjs cky gñ , d Hkjs cky okys 0; fDr dks ; nPN; k pñk tkrk gSbl ckr dh D; k i kf; drk gSfd ; g 0; fDr vkneh gks tcfD ; g ekuk tkrk gS fd vknfe; ka vj vj rka dh l d; k cjkj gñ

- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
(c) $\frac{13}{21}$ (d) $\frac{7}{21}$

63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

- (a) $2/3$ (b) $-9/4$
(c) $9/4$ (d) 1

64. ; fn fdl h ehukj ds "kñkz dk mlu; u dsk rhu l j[k fclnq;ka A, B rFkk C l stks ehukj ds vk/kkj dh vkj gñ "kñkz $30^\circ, 45^\circ$ rFkk 60° gñ rks $AB : BC$ vuqkr g&

- (a) $1 : \sqrt{3}$ (b) $2 : 3$
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65. $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)(3 + \cos x)}{x \tan 4x}$ cjkj gksk&

- (a) 2 (b) $1/2$
(c) 4 (d) 3

66. $(1 - 2\sqrt{x})^{50}$ ds }in folrj ea x ds iwkkñkñ ?kñrka ds xqkkñkñ dk ; ksx g&

- (a) $\frac{1}{2}(3^{50} - 1)$ (b) $\frac{1}{2}(2^{50} + 1)$
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67. ekuk $y(x)$ vody l ehdj .k

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68. ; fn m nks fhku oklrfod l q; kvka l rFkk n, $(l, n > 1)$ dk l ekurj ek; gñ G_1, G_2, \dots, G_3 l rFkk n dse/; xqkkñkñ ek; gñ rks $G_1^4 + 2G_2^4 + G_3^4$ cjkj gksk&

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69. , d f=Hkt PQR eñ $\sin P, \sin Q, \sin R$ l ekurj Jskh ea gñ rks&

- (a) yEc l ekurj Jskh ea gñ
(b) yEc gjkred Jskh ea gñ
(c) ekf/; dk, i xqkkñkñ Jskh ea gñ
(d) ekf/; dk, i l ekurj Jskh ea gñ

70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j[kh tkrh gñ bl ckr dh D; k i kf; drk gñfd nks dkyh xns , d l kf u vk; ð

- (a) $1/2$ (b) $7/15$
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- (a) 0 (b) 1
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72. ; fn $a_n = \sum_{r=0}^n \frac{1}{{}^nC_r}$ rks $\sum_{r=0}^n \frac{r}{{}^nC_r}$ gksk&

- (a) $(n - 1) a_n$ (b) $n a_n$
(c) $\frac{1}{2} n a_n$ (d) dkbz ugha

73. ; fn ω bdkbz dk dkYifud ?kueny gñ rks $(1 + \omega - \omega^2)^7$ cjkj gksk&

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75. ; fn "kñ ATTRACTION ds v{kj ka dksfy [k tk; s rksbl ckr dh D; k i kf; drk gñfd l Hkh 'T', d l kf vk; ð

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77. ekuk fd 5% vknfe; ka rFkk 0.25% vñrka ds Hkjs cky gñ , d Hkjs cky okys 0; fDr dks ; nPN; k pñk tkrk gñbl ckr dh D; k i kf; drk gñfd ; g 0; fDr vknf gñ tcf; ; g ekuk tkrk gñfd vknfe; ka vñrka dh l q; k cjkj gñ

- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
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63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

- (a) $2/3$ (b) $-9/4$
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69. , d f=ñkñ PQR eñ $\sin P, \sin Q, \sin R$ l ekñrj Js kh ea gñ rks&

- (a) yEc l ekñrj Js kh ea gñ
(b) yEc gjkñed Js kh ea gñ
(c) ekf/; dk, i xqkkñk Js kh ea gñ
(d) ekf/; dk, i l ekñrj Js kh ea gñ

70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j [kh tkrh gñ bl ckr dh D; k i kf; drk gñfd nks dkyh xns , d l kf u vk; ã

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(c) $\frac{13}{63}$ (d) $\frac{17}{63}$

77. ekuk fd 5% vkñfe; ka rFkk 0.25% vkñrka ds Hñjs cky gñ , d Hñjs cky okys 0; fDr dks ; nPN; k pñk tkrk gñ bl ckr dh D; k i kf; drk gñfd ; g 0; fDr vkñeh gñ tcf; ; g ekuk tkrk gñfd vkñfe; ka vkñ vkñrka dh l ã; k cjkj gñ

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70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j[kh tkrh gñbl ckr dh D; k i kf; drk gSfd nks dkyh xns , d l kFk u vk; ð

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76. , d c& ea 4 l On rFkk 5 dkyh xns gñ nñ jsc& ea 6 l On rFkk 7 dkyh xns gñ A, d xan i fke c& l snñ jsc& ea Mkyh tkrh gS rksbl ckr dh D; k i kf; drk gksk fd fudkyh tkus okyh xan l On gk&

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77. ekuk fd 5% vknfe; ka rFkk 0.25% vj rka ds Hkjs cky gñ , d Hkjs cky okys 0; fDr dks ; nPN; k pñk tkrk gSbl ckr dh D; k i kf; drk gSfd ; g 0; fDr vknesh gks tcfD ; g ekuk tkrk gS fd vknfe; ka vj vj rka dh l ; k cjkj gñ

- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
(c) $\frac{13}{21}$ (d) $\frac{7}{21}$

63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

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71. oUlka $x^2 + y^2 = 4$ rFkk $x^2 + y^2 - 6x - 8y - 24 = 0$ ij [kñph xbl mñk; fu'B Li "kj ã kvka dh l ã; k gksk&

- (a) 0 (b) 1
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72. ; fn $a_n = \sum_{r=0}^n \frac{1}{{}^nC_r}$ rks $\sum_{r=0}^n \frac{r}{{}^nC_r}$ gksk&

- (a) $(n - 1) a_n$ (b) $n a_n$
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73. ; fn ω bdkbz dk dkñifud ?kueny gñ rks $(1 + \omega - \omega^2)^7$ cjkj gksk&

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75. ; fn "kñ ATTRACTION ds v{kj ka dksfy [k tk; s rks bl ckr dh D; k i kf; drk gñfd l Hkh 'T', d l kf vk; ã

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63. ; fn a rFkk b l ehdj .k $x^2 + ax + b = 0$ ds v"kt; eW; gñ rks $x^2 + ax + b$ dk U; ure eku gksk&

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- (a) yEc l ekñrj Js kh ea gñ
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(c) ekf/; dk, i xqkkñk Js kh ea gñ
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70. 7 l On xns rFkk 3 dkyh xns , d iñDr ea j [kh tkrh gñ bl ckr dh D; k i kf; drk gñfd nks dkyh xns , d l kf u vk; ã

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- (a) $\frac{20}{21}$ (b) $\frac{17}{21}$
(c) $\frac{13}{21}$ (d) $\frac{7}{21}$

78. A die is tossed thrice. Getting an even number is considered as success then variance of the binomial distribution is:

- (a) $1/2$ (b) $3/4$
 (c) $1/4$ (d) $1/3$

79. If X follows binomial distribution with mean 4 and variance 2, then $P(X \geq 5)$ is:

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
 (c) $\frac{79}{256}$ (d) none

80. A coin is tossed 5 times. What is the probability of getting at least 3 heads?

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
 (c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then what is the value of $\sin A$?

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
 (c) 1 (d) none

82. If $\cot A \cot B = 2$, then what is the value of $\cos(A + B) \sec(A - B)$:

- (a) $1/3$ (b) $2/3$
 (c) 1 (d) -1

Direction: For the next three items that follow:

Let $\sin(A + B) = 1$ and $\sin(A - B) = \frac{1}{2}$ where

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. What is the value of A?

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. What is the value of $\tan(A + 2B) \cdot \tan(2A + B)$?

- (a) -1 (b) 0
 (c) 1 (d) 2

85. What is the value of $\sin^2 A - \sin^2 B$:

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- (a) $1/2$ (b) $3/4$
 (c) $1/4$ (d) $1/3$

79. If X follows binomial distribution with mean 4 and variance 2, then $P(X \geq 5)$ is:

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
 (c) $\frac{79}{256}$ (d) none

80. A coin is tossed 5 times. What is the probability of getting at least 3 heads?

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
 (c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then what is the value of $\sin A$?

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
 (c) 1 (d) none

82. If $\cot A \cot B = 2$, then what is the value of $\cos(A + B) \sec(A - B)$:

- (a) $1/3$ (b) $2/3$
 (c) 1 (d) -1

Direction: For the next three items that follow:

Let $\sin(A + B) = 1$ and $\sin(A - B) = \frac{1}{2}$ where

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. What is the value of A?

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. What is the value of $\tan(A + 2B) \cdot \tan(2A + B)$?

- (a) -1 (b) 0
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85. What is the value of $\sin^2 A - \sin^2 B$:

- (a) 0 (b) $1/2$
 (c) 1 (d) 2

86. If the sides of ΔABC satisfy $3a = b + c$ then value of $\cot \frac{B}{2} \cdot \cot \frac{C}{2}$ is:

- (a) 1 (b) 2
 (c) 3 (d) 4

87. If the sides of a triangle are in the ratio $2 : \sqrt{6} : 1 + \sqrt{3}$, then what is the smallest angle of triangle?

- (a) 75° (b) 60°
 (c) 45° (d) 30°

88. What is the value of $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$?

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
 (c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. What is the principal value of $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$:

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. Two angles of a triangle are $\tan^{-1} \frac{1}{2}$ and $\tan^{-1} \frac{1}{3}$, then third angle:

- (a) 30° (b) 45°
 (c) 90° (d) 135°

91. What is the standard deviation of number 7, 9, 11, 13 and 15?

- (a) 2.2 (b) 2.4
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78. A die is tossed thrice. Getting an even number is considered as success then variance of the binomial distribution is:

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90. Two angles of a triangle are $\tan^{-1} \frac{1}{2}$ and $\tan^{-1} \frac{1}{3}$, then third angle:

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78. ; d ikl s dks rhu ckj mNkyk tkrk gS rFkk I e I [; k vkus dks I Qyrk ekuk tkrk gS rks f} in foLrkj dk i j.k gsk&

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- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
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80. ; d fl Ddk 5 ckj mNkyk tkrk gA de&I &de 3 "krkZ vkus dh ikf; drk Kkr dhft, &

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(c) 1 (d) dkbZ ugha

82. ; fn $\cot A \cot B = 2$ rks $\cos(A + B) \sec(A - B)$ dk eku D; k gsk&

- (a) $1/3$ (b) $2/3$
(c) 1 (d) -1

funZ'k %vxys rhu iZ'uka gr&

ekuk $\sin(A + B) = 1$ rFkk $\sin(A - B) = \frac{1}{2}$ tgk

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- (a) 1 (b) 2
(c) 3 (d) 4

87. ; fn fdl h $f = \text{Hkqt}$ dh Hkqt k, j $2 : \sqrt{6} : 1 + \sqrt{3}$ ds vuq kr ea gS rks $f = \text{Hkqt}$ dk I cl s Nk/k dsk gsk&

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90. fdl h $f = \text{Hkqt}$ ds nks dsk $\tan^{-1} \frac{1}{2}$ vkj $\tan^{-1} \frac{1}{3}$ gS rks rhl jk dsk dk eku gsk&

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91. I [; kvla 7] 9] 11] 13 rFkk 15 dk ekud fopyu g&

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78. ; d ikl s dks rhu ckj mNkyk tkrk gS rFkk I e I ; k vkus dks I Qyrk ekuk tkrk gS rks f} in foLrkj dk i j.k gsk&

- (a) $1/2$ (b) $3/4$
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79. ; fn X f} in forj.k gS tgk ek/; 4 rFkk i j.k 2 gS rks $P(X \geq 5)$ g&

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funZ'k %vxysrhu iZ'ukagr&

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87. ; fn fdl h $f = \text{Hkqt}$ dh Hkqt k, j $2 : \sqrt{6} : 1 + \sqrt{3}$ ds vuq kr ea gS rks $f = \text{Hkqt}$ dk I cl s Nk/k dsk gsk&

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- (a) 1 (b) 2
(c) 3 (d) 4

87. ; fn fdl h $f = \text{Hkqt}$ dh Hkqt k, j $2 : \sqrt{6} : 1 + \sqrt{3}$ ds vuq kr ea gS rks $f = \text{Hkqt}$ dk I cl s Nk/k dsk gsk&

- (a) 75° (b) 60°
(c) 45° (d) 30°

88. $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$ dk eku gsk&

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$ dk e[; eku gsk&

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. fdl h $f = \text{Hkqt}$ ds nks dsk $\tan^{-1} \frac{1}{2}$ vkj $\tan^{-1} \frac{1}{3}$ gS rks rhl jk dsk dk eku gsk&

- (a) 30° (b) 45°
(c) 90° (d) 135°

91. I [; kvla 7] 9] 11] 13 rFkk 15 dk ekud fopyu g&

- (a) 2.2 (b) 2.4
(c) 2.6 (d) 2.8

78. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{3}{4}$, then $\sin(A+B)$ is

- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$
 (c) $\frac{1}{4}$ (d) $\frac{1}{3}$

79. If $\sin X = \frac{1}{2}$ and $\cos Y = \frac{4}{5}$, then $\sin(X+Y)$ is

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
 (c) $\frac{79}{256}$ (d) $\frac{1}{2}$

80. If $\sin A = \frac{3}{5}$ and $\cos B = \frac{4}{5}$, then $\sin(A+B)$ is

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
 (c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then $\sin A$ is

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
 (c) 1 (d) $\frac{1}{P}$

82. If $\cot A \cot B = 2$, then $\cos(A+B) \sec(A-B)$ is

- (a) $\frac{1}{3}$ (b) $\frac{2}{3}$
 (c) 1 (d) -1

Find the value of

$$\sin(A+B) = 1 \text{ and } \sin(A-B) = \frac{1}{2} \text{ then } \tan A =$$

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. $\tan A$ is

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A+2B) \cdot \tan(2A+B)$ is

- (a) -1 (b) 0
 (c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ is

- (a) 0 (b) $\frac{1}{2}$
 (c) 1 (d) 2

86. If $f = \frac{1}{2}$ and $g = \frac{1}{2}$, then $\cot \frac{B}{2} \cdot \cot \frac{C}{2}$ is

- (a) 1 (b) 2
 (c) 3 (d) 4

87. If $\sin A = \frac{1}{\sqrt{6}}$ and $\cos B = \frac{1}{\sqrt{3}}$, then $\sin(A+B)$ is

- (a) 75° (b) 60°
 (c) 45° (d) 30°

88. $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$ is

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
 (c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$ is

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{3}$, then $\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3}$ is

- (a) 30° (b) 45°
 (c) 90° (d) 135°

91. If $\sin A = \frac{7}{9}$, $\sin B = \frac{11}{13}$ and $\sin C = \frac{15}{17}$, then $\sin(A+B+C)$ is

- (a) 2.2 (b) 2.4
 (c) 2.6 (d) 2.8

78. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{3}{4}$, then $\sin(A+B)$ is

- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$
 (c) $\frac{1}{4}$ (d) $\frac{1}{3}$

79. If $\sin X = \frac{1}{2}$ and $\cos Y = \frac{4}{5}$, then $\sin(X+Y)$ is

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
 (c) $\frac{79}{256}$ (d) $\frac{1}{2}$

80. If $\sin A = \frac{3}{5}$ and $\cos B = \frac{4}{5}$, then $\sin(A+B)$ is

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
 (c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then $\sin A$ is

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
 (c) 1 (d) $\frac{1}{P}$

82. If $\cot A \cot B = 2$, then $\cos(A+B) \sec(A-B)$ is

- (a) $\frac{1}{3}$ (b) $\frac{2}{3}$
 (c) 1 (d) -1

Example

If $\sin(A+B) = 1$ and $\sin(A-B) = \frac{1}{2}$, then

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. A is

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A+2B) \cdot \tan(2A+B)$ is

- (a) -1 (b) 0
 (c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ is

- (a) 0 (b) $\frac{1}{2}$
 (c) 1 (d) 2

86. If $f = \frac{1}{2}$ and $g = \frac{1}{2}$, then $\cot \frac{B}{2} \cdot \cot \frac{C}{2}$ is

- (a) 1 (b) 2
 (c) 3 (d) 4

87. If $\sin A = \frac{1}{\sqrt{6}}$ and $\cos B = \frac{1}{\sqrt{3}}$, then $\sin(A+B)$ is

- (a) 75° (b) 60°
 (c) 45° (d) 30°

88. $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$ is

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
 (c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$ is

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{3}$, then $\sin(A+B)$ is

- (a) 30° (b) 45°
 (c) 90° (d) 135°

91. If $\sin A = \frac{7}{9}$ and $\cos B = \frac{11}{13}$, then $\sin(A+B)$ is

- (a) 2.2 (b) 2.4
 (c) 2.6 (d) 2.8

78. ; d ikl s dks rhu ckj mNkyk tkrk gS rFkk I e I ; k vkus dks I Qyrk ekuk tkrk gS rks f} in foLrkj dk i j.k gsk&

- (a) $1/2$ (b) $3/4$
(c) $1/4$ (d) $1/3$

79. ; fn X f} in forj.k gS tgk ek/; 4 rFkk i j.k 2 gS rks $P(X \geq 5)$ g&

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
(c) $\frac{79}{256}$ (d) dkbZ ugha

80. ; d fl Ddk 5 ckj mNkyk tkrk gA de&l & de 3 "krkZ vkus dh ikf; drk Kkr dhft, &

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
(c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. ; fn $\sec A + \tan A = P$ rks $\sin A$ dk eku gsk&

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
(c) 1 (d) dkbZ ugha

82. ; fn $\cot A \cot B = 2$ rks $\cos(A + B) \sec(A - B)$ dk eku D; k gsk&

- (a) $1/3$ (b) $2/3$
(c) 1 (d) -1

funZ'k %vxys rhu iZ'uka gr&

ekuk $\sin(A + B) = 1$ rFkk $\sin(A - B) = \frac{1}{2}$ tgk

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. A dk eku D; k gsk&

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A + 2B) \cdot \tan(2A + B)$ dk eku D; k gsk&

- (a) -1 (b) 0
(c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ dk eku gsk&

- (a) 0 (b) $1/2$
(c) 1 (d) 2

86. ; fn $f = \text{Hkqt}$ dh Hkqt k, j I r qV dj rh gA $3a = b + c$ dk rks $\cot \frac{B}{2} \cdot \cot \frac{C}{2}$ dk eku gsk&

- (a) 1 (b) 2
(c) 3 (d) 4

87. ; fn fdl h $f = \text{Hkqt}$ dh Hkqt k, j $2 : \sqrt{6} : 1 + \sqrt{3}$ ds vuq kr ea gks rks $f = \text{Hkqt}$ dk I cl s Nk/k dsk gsk&

- (a) 75° (b) 60°
(c) 45° (d) 30°

88. $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$ dk eku gsk&

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$ dk e[; eku gsk&

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. fdl h $f = \text{Hkqt}$ ds nks dsk $\tan^{-1} \frac{1}{2}$ vkj $\tan^{-1} \frac{1}{3}$ gA rks rhl jk dsk dk eku gsk&

- (a) 30° (b) 45°
(c) 90° (d) 135°

91. I ; kvla 7] 9] 11] 13 rFkk 15 dk ekud fopyu g&

- (a) 2.2 (b) 2.4
(c) 2.6 (d) 2.8

78. ; d ikl s dks rhu ckj mNkyk tkrk gS rFkk I e I ; k vkus dks I Qyrk ekuk tkrk gS rks f} in foLrkj dk i j.k gsk&

- (a) $1/2$ (b) $3/4$
(c) $1/4$ (d) $1/3$

79. ; fn X f} in forj.k gS tgk ek/; 4 rFkk i j.k 2 gS rks $P(X \geq 5)$ g&

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
(c) $\frac{79}{256}$ (d) dkbZ ugha

80. ; d fl Ddk 5 ckj mNkyk tkrk gA de&I &de 3 "krkZ vkus dh ikf; drk Kkr dhft, &

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
(c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. ; fn $\sec A + \tan A = P$ rks $\sin A$ dk eku gsk&

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
(c) 1 (d) dkbZ ugha

82. ; fn $\cot A \cot B = 2$ rks $\cos(A + B) \sec(A - B)$ dk eku D; k gsk&

- (a) $1/3$ (b) $2/3$
(c) 1 (d) -1

funZ'k %vxys rhu iZ'uka gr&

ekuk $\sin(A + B) = 1$ rFkk $\sin(A - B) = \frac{1}{2}$ tgk

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. A dk eku D; k gsk&

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A + 2B) \cdot \tan(2A + B)$ dk eku D; k gsk&

- (a) -1 (b) 0
(c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ dk eku gsk&

- (a) 0 (b) $1/2$
(c) 1 (d) 2

86. ; fn $f = \text{Hkqt}$ dh Hkqt k, j I r qV dj rh gA $3a = b + c$ dk rks $\cot \frac{B}{2} \cdot \cot \frac{C}{2}$ dk eku gsk&

- (a) 1 (b) 2
(c) 3 (d) 4

87. ; fn fdl h $f = \text{Hkqt}$ dh Hkqt k, j $2 : \sqrt{6} : 1 + \sqrt{3}$ ds vuq kr ea gS rks $f = \text{Hkqt}$ dk I cl s Nk/k dsk gsk&

- (a) 75° (b) 60°
(c) 45° (d) 30°

88. $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$ dk eku gsk&

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$ dk e[; eku gsk&

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. fdl h $f = \text{Hkqt}$ ds nks dsk $\tan^{-1} \frac{1}{2}$ vkj $\tan^{-1} \frac{1}{3}$ gA rks rhl jk dsk dk eku gsk&

- (a) 30° (b) 45°
(c) 90° (d) 135°

91. I ; kvla 7] 9] 11] 13 rFkk 15 dk ekud fopyu g&

- (a) 2.2 (b) 2.4
(c) 2.6 (d) 2.8

78. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{3}{4}$, then $\sin(A+B)$ is

- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$
 (c) $\frac{1}{4}$ (d) $\frac{1}{3}$

79. If $\sin X = \frac{1}{2}$ and $\cos Y = \frac{1}{4}$, then $\sin(X+Y)$ is

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
 (c) $\frac{79}{256}$ (d) $\frac{1}{2}$

80. If $\sin A = \frac{3}{5}$ and $\cos B = \frac{4}{5}$, then $\sin(A+B)$ is

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
 (c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then $\sin A$ is

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
 (c) 1 (d) $\frac{1}{P}$

82. If $\cot A \cot B = 2$, then $\cos(A+B) \sec(A-B)$ is

- (a) $\frac{1}{3}$ (b) $\frac{2}{3}$
 (c) 1 (d) -1

Find the value of

$$\sin(A+B) = 1 \text{ and } \sin(A-B) = \frac{1}{2} \text{ then } \tan A =$$

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. $\tan A$ is

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A+2B) \cdot \tan(2A+B)$ is

- (a) -1 (b) 0
 (c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ is

- (a) 0 (b) $\frac{1}{2}$
 (c) 1 (d) 2

86. If $f = \sin A$ and $g = \cos A$, then $\cot \frac{B}{2} \cdot \cot \frac{C}{2}$ is

- (a) 1 (b) 2
 (c) 3 (d) 4

87. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{\sqrt{2}}$, then $\sin(A+B)$ is

- (a) 75° (b) 60°
 (c) 45° (d) 30°

88. $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$ is

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
 (c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$ is

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{3}$, then $\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3}$ is

- (a) 30° (b) 45°
 (c) 90° (d) 135°

91. If $\sin A = \frac{7}{9}$ and $\cos B = \frac{11}{13}$, then $\sin(A+B)$ is

- (a) 2.2 (b) 2.4
 (c) 2.6 (d) 2.8

78. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{3}{4}$, then $\sin(A+B)$ is

- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$
(c) $\frac{1}{4}$ (d) $\frac{1}{3}$

79. If $\sin X = \frac{1}{2}$ and $\cos Y = \frac{1}{4}$, then $\sin(X+Y)$ is

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
(c) $\frac{79}{256}$ (d) $\frac{1}{2}$

80. If $\sin A = \frac{3}{5}$ and $\cos B = \frac{4}{5}$, then $\sin(A+B)$ is

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
(c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then $\sin A$ is

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
(c) 1 (d) $\frac{1}{P}$

82. If $\cot A \cot B = 2$, then $\cos(A+B) \sec(A-B)$ is

- (a) $\frac{1}{3}$ (b) $\frac{2}{3}$
(c) 1 (d) -1

Find the value of

$$\sin(A+B) = 1 \text{ and } \sin(A-B) = \frac{1}{2} \text{ then } \tan A =$$

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. $\tan A = \frac{1}{\sqrt{3}}$, then $\tan 2A$ is

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A+2B) \cdot \tan(2A+B)$ is

- (a) -1 (b) 0
(c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ is

- (a) 0 (b) $\frac{1}{2}$
(c) 1 (d) 2

86. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{4}$, then $\sin(A+B)$ is

- (a) 1 (b) 2
(c) 3 (d) 4

87. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{4}$, then $\sin(A+B)$ is

- (a) 75° (b) 60°
(c) 45° (d) 30°

88. $\cos\left[\tan^{-1}\left\{\tan\left(\frac{15\pi}{4}\right)\right\}\right]$ is

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1}\left(\frac{2}{\sqrt{3}}\right)$ is

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{4}$, then $\sin(A+B)$ is

- (a) 30° (b) 45°
(c) 90° (d) 135°

91. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{4}$, then $\sin(A+B)$ is

- (a) 2.2 (b) 2.4
(c) 2.6 (d) 2.8

78. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{3}{4}$, then $\sin(A+B)$ is

- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$
(c) $\frac{1}{4}$ (d) $\frac{1}{3}$

79. If $\sin X = \frac{1}{2}$ and $\cos Y = \frac{1}{4}$, then $\sin(X+Y)$ is

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
(c) $\frac{79}{256}$ (d) $\frac{1}{2}$

80. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{2}$, then $\sin(A+B)$ is

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
(c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then $\sin A$ is

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
(c) 1 (d) $\frac{1}{P}$

82. If $\cot A \cot B = 2$, then $\cos(A+B) \sec(A-B)$ is

- (a) $\frac{1}{3}$ (b) $\frac{2}{3}$
(c) 1 (d) -1

Find the value of

$$\sin(A+B) = 1 \text{ and } \sin(A-B) = \frac{1}{2} \text{ then } \tan A = ?$$

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. $\tan A = \frac{1}{\sqrt{3}}$, then $\tan 2A$ is

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A+2B) \cdot \tan(2A+B)$ is

- (a) -1 (b) 0
(c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ is

- (a) 0 (b) $\frac{1}{2}$
(c) 1 (d) 2

86. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{4}$, then $\sin(A+B)$ is

- (a) 1 (b) 2
(c) 3 (d) 4

87. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{2}$, then $\sin(A+B)$ is

- (a) 75° (b) 60°
(c) 45° (d) 30°

88. $\cos\left[\tan^{-1}\left\{\tan\left(\frac{15\pi}{4}\right)\right\}\right]$ is

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1}\left(\frac{2}{\sqrt{3}}\right)$ is

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{2}$, then $\sin(A+B)$ is

- (a) 30° (b) 45°
(c) 90° (d) 135°

91. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{2}$, then $\sin(A+B)$ is

- (a) 2.2 (b) 2.4
(c) 2.6 (d) 2.8

78. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{3}{4}$, then $\sin(A+B)$ is

- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$
(c) $\frac{1}{4}$ (d) $\frac{1}{3}$

79. If $\sin X = \frac{1}{2}$ and $\cos Y = \frac{4}{5}$, then $\sin(X+Y)$ is

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
(c) $\frac{79}{256}$ (d) $\frac{1}{2}$

80. If $\sin A = \frac{3}{5}$ and $\cos B = \frac{4}{5}$, then $\sin(A+B)$ is

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
(c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. If $\sec A + \tan A = P$, then $\sin A$ is

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
(c) 1 (d) $\frac{1}{P}$

82. If $\cot A \cot B = 2$, then $\cos(A+B) \sec(A-B)$ is

- (a) $\frac{1}{3}$ (b) $\frac{2}{3}$
(c) 1 (d) -1

Find the value of

$$\sin(A+B) = 1 \text{ and } \sin(A-B) = \frac{1}{2} \text{ then } \tan A =$$

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. $\tan A$ is

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A+2B) \cdot \tan(2A+B)$ is

- (a) -1 (b) 0
(c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ is

- (a) 0 (b) $\frac{1}{2}$
(c) 1 (d) 2

86. If $f = \sin A$ and $g = \cos A$, then $\frac{f}{g} = \tan A$ and $\frac{g}{f} = \cot A$ is

- (a) 1 (b) 2
(c) 3 (d) 4

87. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{\sqrt{2}}$, then $\sin(A+B)$ is

- (a) 75° (b) 60°
(c) 45° (d) 30°

88. $\cos\left[\tan^{-1}\left\{\tan\left(\frac{15\pi}{4}\right)\right\}\right]$ is

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1}\left(\frac{2}{\sqrt{3}}\right)$ is

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. If $\sin A = \frac{1}{2}$ and $\cos B = \frac{1}{3}$, then $\sin(A+B)$ is

- (a) 30° (b) 45°
(c) 90° (d) 135°

91. If $\sin A = \frac{7}{9}$ and $\cos B = \frac{11}{13}$, then $\sin(A+B)$ is

- (a) 2.2 (b) 2.4
(c) 2.6 (d) 2.8

78. ; d ikl s dks rhu ckj mNkyk tkrk gS rFkk I e I ; k vkus dks I Qyrk ekuk tkrk gS rks f} in foLrkj dk i j.k gsk&

- (a) $1/2$ (b) $3/4$
(c) $1/4$ (d) $1/3$

79. ; fn X f} in forj.k gS tgk ek/; 4 rFkk i j.k 2 gS rks $P(X \geq 5)$ g&

- (a) $\frac{93}{256}$ (b) $\frac{77}{256}$
(c) $\frac{79}{256}$ (d) dkbZ ugha

80. ; d fl Ddk 5 ckj mNkyk tkrk gA de&I &de 3 "krkZ vkus dh ikf; drk Kkr dhft, &

- (a) $\frac{3}{32}$ (b) $\frac{1}{2}$
(c) $\frac{7}{32}$ (d) $\frac{13}{32}$

81. ; fn $\sec A + \tan A = P$ rks $\sin A$ dk eku gsk&

- (a) $\frac{P^2 - 1}{P^2 + 1}$ (b) $\frac{P^2 + 1}{P^2 - 1}$
(c) 1 (d) dkbZ ugha

82. ; fn $\cot A \cot B = 2$ rks $\cos(A + B) \sec(A - B)$ dk eku D; k gsk&

- (a) $1/3$ (b) $2/3$
(c) 1 (d) -1

funZ'k %vxysrhu iZ'ukagr&

ekuk $\sin(A + B) = 1$ rFkk $\sin(A - B) = \frac{1}{2}$ tgk

$$A, B \in \left[0, \frac{\pi}{2}\right]$$

83. A dk eku D; k gsk&

- (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{8}$

84. $\tan(A + 2B) \cdot \tan(2A + B)$ dk eku D; k gsk&

- (a) -1 (b) 0
(c) 1 (d) 2

85. $\sin^2 A - \sin^2 B$ dk eku gsk&

- (a) 0 (b) $1/2$
(c) 1 (d) 2

86. ; fn $f = \text{Hkqt}$ dh Hkqt k, j I rQV dj rh gA $3a = b + c$ dk rks $\cot \frac{B}{2} \cdot \cot \frac{C}{2}$ dk eku gsk&

- (a) 1 (b) 2
(c) 3 (d) 4

87. ; fn fdl h $f = \text{Hkqt}$ dh Hkqt k, j $2 : \sqrt{6} : 1 + \sqrt{3}$ ds vuq kr ea gS rks $f = \text{Hkqt}$ dk I cl s Nk/k dsk gsk&

- (a) 75° (b) 60°
(c) 45° (d) 30°

88. $\cos \left[\tan^{-1} \left\{ \tan \left(\frac{15\pi}{4} \right) \right\} \right]$ dk eku gsk&

- (a) $-\frac{1}{\sqrt{2}}$ (b) 0
(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{1}{2\sqrt{2}}$

89. $\sec^{-1} \left(\frac{2}{\sqrt{3}} \right)$ dk e[; eku gsk&

- (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$
(c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

90. fdl h $f = \text{Hkqt}$ ds nks dsk $\tan^{-1} \frac{1}{2}$ vkj $\tan^{-1} \frac{1}{3}$ gA rks rhl jk dsk dk eku gsk&

- (a) 30° (b) 45°
(c) 90° (d) 135°

91. I ; kvla 7] 9] 11] 13 rFkk 15 dk ekud fopyu g&

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 (a) σ^2 (b) $n^2\sigma^2$
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95. If $\sum_{i=1}^n (x_i - 2) = 110$, $\sum_{i=1}^n (x_i - 5) = 20$ what is mean:
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 (c) $\frac{17}{3}$ (d) $\frac{17}{9}$
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 (a) 151.5 (b) 143.5
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100. p, q, r, s and t are five numbers such that the average of $p, q,$ and r is 5 and that of s and t is 10 then what is the average of all five numbers?
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103. If $z = f \circ f(x)$, where $f(x) = x^2$, then what is $\frac{dz}{dx}$ equal to:
 (a) x^3 (b) $2x^3$
 (c) $4x^3$ (d) $4x^2$
104. Consider the following statements.
 I. The function $f(x) = \sqrt[3]{x}$ is continuous all x except at $x = 0$
 II. The function $f(x) = [x]$ is continuous at $x = 3.99$, where $[x] \rightarrow$ G.I.F. which of the above is/are correct.
 (a) only I (b) only II
 (c) both (d) none
105. What is the slope of the tangent to the curve $y = \sin^{-1}(\sin^2 x)$ at $x = 0$
 (a) 0 (b) 1
 (c) 2 (d) none
106. The distance between the centre of two spheres $x^2 + y^2 + z^2 - 4y + 3 = 0$ and $x^2 + y^2 + z^2 + 2x + 4z - 4 = 0$ is:
 (a) 5 (b) 4
 (c) 3 (d) 2

92. Jskh ${}^nC_1, {}^nC_2, {}^nC_3, \dots, {}^nC_n$ dk l ekUrj ek/; gksk&

(a) $\frac{2^n - 1}{n}$ (b) $\frac{2^n}{n+1}$

(c) $\frac{2^n}{n}$ (d) $\frac{2^{n+1}}{n+1}$

93. , d pj yftl dk eku 2, 3, 4, 2, 5, 4, 3, 2 rFkk 1 eku xg.k djrk gS rks cgyd gksk&

(a) 2 (b) 3

(c) 4 (d) 5

94. v0; ofLFkr vkadMs ds iR; d i f.k.k dk i j.k σ^2 gS bl sn l s xqk fd; k tkrk gA rks u; s l epp; dk i j.k D; k gksk&

(a) σ^2 (b) $n^2\sigma^2$

(c) $n\sigma^2$ (d) $\frac{\sigma^2}{n}$

95. ; fn $\sum_{i=1}^n (x_i - 2) = 110, \sum_{i=1}^n (x_i - 5) = 20$ rks ek/; D; k gksk&

(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

(c) $\frac{17}{3}$ (d) $\frac{17}{9}$

96. nks l [; ; kvka $(11110)_2$ rFkk $(1010)_2$ dk ; l s x gksk&

(a) $(101000)_2$ (b) $(110000)_2$

(c) $(100100)_2$ (d) $(101100)_2$

97. ekuk s l Hkh i w k z k s dk l epp; gA s ij , d l Ecl/k R bl izdkj gS fd aRb ; fn $a \geq b$ tgk $a, b \in S^+$ rks g&

(a) Lory; ; ijUrqu l efer vj l Øed

(b) Lory; ; l efer ijUrqu l Øed ugha

(c) r; ; rk l Ecl/k

(d) l efer ijUrqu rks Lory; ; vj u gh l Øed

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(a) dHkh l ffeJ

(b) l nØ vijfes

(c) l nØ l ffeJ

(d) l nØ okLrfod

99. iFke 20 ik-frd l [; ; kvka dsoxk dk ek/; gksk&

(a) 151.5 (b) 143.5

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100. p, q, r, s rFkk t i k p l [; ; k, j, bl izdkj gS fd p, q rFkk r dk vj r 5 gS rFkk s vj t dk vj r 10 gS rks l Hkh i k p l [; ; kvka dk vj r gksk&

(a) 7.75 (b) 7.5

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(a) 0 (b) n h? kb ùk

(c) vfrijoy; (d) dkbz ugha

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I. Qyu $f(x) = \sqrt[3]{x}$, $x = 0$ dks NkMedj l Hkh fclnq/ka ij l rr-gkskA

II. Qyu $f(x) = [x]$, $x = 3.99$ ij l rr-gksk tgk $[x] \rightarrow G.I.F.$

fuEu eal s d k l k @ l s l R; g&

(a) dØy 1 (b) dØy 2

(c) nksuka (d) dkbz ugha

105. 0Ø $y = \sin^{-1}(\sin^2x)$ ij $x = 0$ ij [kph xbZ Li "kj [k dh iØ.krk g&

(a) 0 (b) 1

(c) 2 (d) dkbz ugha

106. nks xlyka $x^2 + y^2 + z^2 - 4y + 3 = 0$ rFkk $x^2 + y^2 + z^2 + 2x + 4z - 4 = 0$ ds dHkh ds e/; dh njh gksk&

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(b) Lory; ; l efer ijUrqu l Øed ugha

(c) r; ; rk l Ecl/k

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(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

(c) $\frac{17}{3}$ (d) $\frac{17}{9}$

96. nks l [; ; kvka $(11110)_2$ rFkk $(1010)_2$ dk ; l s x gksk&

(a) $(101000)_2$ (b) $(110000)_2$

(c) $(100100)_2$ (d) $(101100)_2$

97. ekuk s l Hkh i w k d k s dk l epp; gA s ij , d l Ecl/k R bl izlkj gS fd aRb ; fn $a \geq b$ tgk $a, b \in S^+$ rks g&

(a) Lory; ; ijUrqu l efer vj l Øed

(b) Lory; ; l efer ijUrqu l Øed ugha

(c) r; ; rk l Ecl/k

(d) l efer ijUrqu rks Lory; ; vj u gh l Øed

98. l ehdj.k $2a^2x^2 - 2abx + b^2 = 0$ ds ey tc $a < 0$ rFkk $b > 0$.

(a) dHkh l ffeJ

(b) l nØ vijfes

(c) l nØ l ffeJ

(d) l nØ okLrfod

99. iFke 20 ik-frd l [; ; kvka dsoxk dk ek/; gksk&

(a) 151.5 (b) 143.5

(c) 65 (d) 72

100. p, q, r, s rFkk t i k p l [; ; k, j bl izlkj gS fd p, q rFkk r dk vj r 5 gS rFkk s vj t dk vj r 10 gS rks l Hkh i k p l [; ; kvka dk vj r gksk&

(a) 7.75 (b) 7.5

(c) 7 (d) 5

101. nks pj x rFkk y grqns l ekJ; . k xqk d byx = 3/2 rFkk bxy = -1/6 gS rks x rFkk y ds e/; l gl ek xqk d g&

(a) -1/4 (b) 1/4

(c) -1/2 (d) 1/2

102. ekuk $z = x + iy$ tgk x, y okLrfod pj gS rFkk $i = \sqrt{-1}$; fn $|2z - 1| = |z - 2|$ rks z dk fclnq i Fk gksk&

(a) 0 (b) n h? kbÙk

(c) vfrijoy; (d) dkbz ugha

103. ; fn $z = fof(x)$ tgk $f(x) = x^2$ rks $\frac{dz}{dx}$ cjkj gksk&

(a) x^3 (b) $2x^3$

(c) $4x^3$ (d) $4x^2$

104. fuEu dFuka ij fopkj dhft, &

I. Qyu $f(x) = \sqrt[3]{x}$, $x = 0$ dks NkMedj l Hkh fclnq/ka ij l rr-gkskA

II. Qyu $f(x) = [x]$, $x = 3.99$ ij l rr-gksk tgk $[x] \rightarrow G.I.F.$

fuEu eal s d k l k @ l s l R; g&

(a) dØy 1 (b) dØy 2

(c) nksuka (d) dkbz ugha

105. 0Ø $y = \sin^{-1}(\sin^2x)$ ij $x = 0$ ij [kph xbZ Li "kj [k dh iØ.krk g&

(a) 0 (b) 1

(c) 2 (d) dkbz ugha

106. nks xkyka $x^2 + y^2 + z^2 - 4y + 3 = 0$ rFkk $x^2 + y^2 + z^2 + 2x + 4z - 4 = 0$ ds dHkh ds e/; dh njh gksk&

(a) 5 (b) 4

(c) 3 (d) 2

92. Jskh ${}^nC_1, {}^nC_2, {}^nC_3, \dots, {}^nC_n$ dk l ekUrj ek/; gksk&

(a) $\frac{2^n - 1}{n}$ (b) $\frac{2^n}{n+1}$

(c) $\frac{2^n}{n}$ (d) $\frac{2^{n+1}}{n+1}$

93. , d pj yftl dk eku 2, 3, 4, 2, 5, 4, 3, 2 rFkk 1 eku xg.k djrk gS rks cgyd gksk&

(a) 2 (b) 3

(c) 4 (d) 5

94. v0; ofLFkr vkadMs dsi R; d i f k . k dk i d j . k σ^2 gS bl sn l s x q k k fd; k tkrk gA rks u; s l e p; dk i d j . k D; k gksk&

(a) σ^2 (b) $n^2\sigma^2$

(c) $n\sigma^2$ (d) $\frac{\sigma^2}{n}$

95. ; fn $\sum_{i=1}^n (x_i - 2) = 110, \sum_{i=1}^n (x_i - 5) = 20$ rks ek/; D; k gksk&

(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

(c) $\frac{17}{3}$ (d) $\frac{17}{9}$

96. nks l [; ; kvka $(11110)_2$ rFkk $(1010)_2$ dk ; l s x gksk&

(a) $(101000)_2$ (b) $(110000)_2$

(c) $(100100)_2$ (d) $(101100)_2$

97. ekuk s l Hkh i w k z k s dk l e p; gA s i j , d l Ecl/k R bl izdkj gS fd aRb ; fn $a \geq b$ tgk $a, b \in S^+$ rks g&

(a) Lory; ; ijUrqu l efer vj l Øed

(b) Lory; ; l efer ijUrqu l Øed ugha

(c) r; ; rk l Ecl/k

(d) l efer ijUrqu rks Lory; ; vj u gh l Øed

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(a) dHkh l ffeJ

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99. iFke 20 ik-frd l [; ; kvka dsoxkã dk ek/; gksk&

(a) 151.5 (b) 143.5

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100. p, q, r, s rFkk t i k p l [; ; k, j bl izdkj gS fd p, q rFkk r dk vj r 5 gS rFkk s vj t dk vj r 10 gS rks l Hkh i k p l [; ; kvka dk vj r gksk&

(a) 7.75 (b) 7.5

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101. nks pj x rFkk y grq nks l ekJ; . k x q k d byx = 3/2 rFkk bxy = -1/6 gS rks x rFkk y ds e/; l gl ã k x q k d g&

(a) -1/4 (b) 1/4

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102. ekuk $z = x + iy$ tgk x, y okLrfod pj gS rFkk $i = \sqrt{-1}$; fn $|2z - 1| = |z - 2|$ rks z dk fclnq i Fk gksk&

(a) 0 (b) n h ? k b ù k

(c) vfrijoy; (d) d k b z ugha

103. ; fn $z = fof(x)$ tgk $f(x) = x^2$ rks $\frac{dz}{dx}$ cjkj gksk&

(a) x^3 (b) $2x^3$

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104. fuEu dFuka ij fopkj dhft, &

I. Qyu $f(x) = \sqrt[3]{x}$, $x = 0$ dks NkMedj l Hkh fclnq/ka ij l rr-gkskA

II. Qyu $f(x) = [x]$, $x = 3.99$ ij l rr-gksk tgk $[x] \rightarrow G.I.F.$

fuEu eal s d k u l k @ l s l R; g&

(a) dØy 1 (b) dØy 2

(c) nksuka (d) d k b z ugha

105. 0Ø $y = \sin^{-1}(\sin^2x)$ ij $x = 0$ ij [kph xbZ Li "k j [k dh i d . krk g&

(a) 0 (b) 1

(c) 2 (d) d k b z ugha

106. nks xkyka $x^2 + y^2 + z^2 - 4y + 3 = 0$ rFkk $x^2 + y^2 + z^2 + 2x + 4z - 4 = 0$ ds dHkh ds e/; dh njh gksk&

(a) 5 (b) 4

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(a) $\frac{2^n - 1}{n}$ (b) $\frac{2^n}{n+1}$

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93. , d pj yftl dk eku 2, 3, 4, 2, 5, 4, 3, 2 rFkk 1 eku xg.k djrk gS rks cgyd gksk&

(a) 2 (b) 3

(c) 4 (d) 5

94. v0; ofLFkr vkadMs ds iR; d i f.k.k dk i j.k σ^2 gS bl sn l s xqk fd; k tkrk gA rks u; s l epp; dk i j.k D; k gksk&

(a) σ^2 (b) $n^2\sigma^2$

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95. ; fn $\sum_{i=1}^n (x_i - 2) = 110, \sum_{i=1}^n (x_i - 5) = 20$ rks ek/; D; k gksk&

(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

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(a) Lory; ; ijUrqu l efer vj l Øed

(b) Lory; ; l efer ijUrqu l Øed ugha

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(a) dØy 1 (b) dØy 2

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(a) 0 (b) 1

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94. v0; ofLFkr vkadMs ds iR; d i f.k.k dk i j.k σ^2 gS bl sn l s xqk fd; k tkrk gA rks u; s l epp; dk i j.k D; k gksk&

(a) σ^2 (b) $n^2\sigma^2$

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95. ; fn $\sum_{i=1}^n (x_i - 2) = 110, \sum_{i=1}^n (x_i - 5) = 20$ rks ek/; D; k gksk&

(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

(c) $\frac{17}{3}$ (d) $\frac{17}{9}$

96. nks l [; ; kvka $(11110)_2$ rFkk $(1010)_2$ dk ; l s x gksk&

(a) $(101000)_2$ (b) $(110000)_2$

(c) $(100100)_2$ (d) $(101100)_2$

97. ekuk s l Hkh i w k z k s dk l epp; gA s ij , d l Ecl/k R bl izdkj gS fd aRb ; fn $a \geq b$ tgl; $a, b \in S^+$ rks g&

(a) Lory; ; ijUrqu l efer vj l Øed

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94. v0; ofLFkr vkadMs dsi R; d i f.k.k dk i j.k σ^2 gS bl sn l s xqk fd; k tkrk gA rks u; s l epp; dk i j.k D; k gksk&

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95. ; fn $\sum_{i=1}^n (x_i - 2) = 110, \sum_{i=1}^n (x_i - 5) = 20$ rks ek/; D; k gksk&

(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

(c) $\frac{17}{3}$ (d) $\frac{17}{9}$

96. nks l [; ; kvka $(11110)_2$ rFkk $(1010)_2$ dk ; l s x gksk&

(a) $(101000)_2$ (b) $(110000)_2$

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(a) Lory; ; ijUrqu l efer vj l Øed

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(a) 0 (b) n h? kb ùk

(c) vfrijoy; (d) dkbz ugha

103. ; fn $z = fof(x)$ tgk $f(x) = x^2$ rks $\frac{dz}{dx}$ cjkj gksk&

(a) x^3 (b) $2x^3$

(c) $4x^3$ (d) $4x^2$

104. fuEu dFuka ij fopkj dhft, &

I. Qyu $f(x) = \sqrt[3]{x}$, $x = 0$ dks NkMedj l Hkh fclnq/ka ij l rr-gkskA

II. Qyu $f(x) = [x]$, $x = 3.99$ ij l rr-gksk tgk $[x] \rightarrow G.I.F.$

fuEu ea l s d k l k @ l s l R; g&

(a) dØy 1 (b) dØy 2

(c) nksuka (d) dkbz ugha

105. 0Ø $y = \sin^{-1}(\sin^2x)$ ij $x = 0$ ij [kph xbZ Li "kj [k dh iØ.krk g&

(a) 0 (b) 1

(c) 2 (d) dkbz ugha

106. nks xkyka $x^2 + y^2 + z^2 - 4y + 3 = 0$ rFkk $x^2 + y^2 + z^2 + 2x + 4z - 4 = 0$ ds dHkh ds e/; dh njh gksk&

(a) 5 (b) 4

(c) 3 (d) 2

92. Jskh ${}^nC_1, {}^nC_2, {}^nC_3, \dots, {}^nC_n$ dk l ekUrj ek/; gksk&

(a) $\frac{2^n - 1}{n}$ (b) $\frac{2^n}{n+1}$

(c) $\frac{2^n}{n}$ (d) $\frac{2^{n+1}}{n+1}$

93. , d pj yftl dk eku 2, 3, 4, 2, 5, 4, 3, 2 rFkk 1 eku xg.k djrk gS rks cgyd gksk&

(a) 2 (b) 3

(c) 4 (d) 5

94. v0; ofLFkr vkadMs ds iR; d i f.k.k dk i j.k σ^2 gS bl sn l s xqk fd; k tkrk gA rks u; s l epp; dk i j.k D; k gksk&

(a) σ^2 (b) $n^2\sigma^2$

(c) $n\sigma^2$ (d) $\frac{\sigma^2}{n}$

95. ; fn $\sum_{i=1}^n (x_i - 2) = 110, \sum_{i=1}^n (x_i - 5) = 20$ rks ek/; D; k gksk&

(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

(c) $\frac{17}{3}$ (d) $\frac{17}{9}$

96. nks l [; ; kvka $(11110)_2$ rFkk $(1010)_2$ dk ; l s x gksk&

(a) $(101000)_2$ (b) $(110000)_2$

(c) $(100100)_2$ (d) $(101100)_2$

97. ekuk s l Hkh i w k d k s dk l epp; gA s ij , d l Ecl/k R bl izlkj gS fd aRb ; fn $a \geq b$ tgk $a, b \in S^+$ rks g&

(a) Lory; ; ijUrqu l efer vj l Øed

(b) Lory; ; l efer ijUrqu l Øed ugha

(c) r; ; rk l Ecl/k

(d) l efer ijUrqu rks Lory; ; vj u gh l Øed

98. l ehdj.k $2a^2x^2 - 2abx + b^2 = 0$ ds ey tc $a < 0$ rFkk $b > 0$.

(a) dHkh l ffeJ

(b) l nØ vijfes

(c) l nØ l ffeJ

(d) l nØ okLrfod

99. iFke 20 ik-frd l [; ; kvka dsoxk dk ek/; gksk&

(a) 151.5 (b) 143.5

(c) 65 (d) 72

100. p, q, r, s rFkk t i k p l [; ; k, j bl izlkj gS fd p, q rFkk r dk vj r 5 gS rFkk s vj t dk vj r 10 gS rks l Hkh i k p l [; ; kvka dk vj r gksk&

(a) 7.75 (b) 7.5

(c) 7 (d) 5

101. nks pj x rFkk y grqns l ekJ; . k xqk d byx = 3/2 rFkk bxy = -1/6 gS rks x rFkk y ds e/; l gl ek xqk d g&

(a) -1/4 (b) 1/4

(c) -1/2 (d) 1/2

102. ekuk $z = x + iy$ tgk x, y okLrfod pj gS rFkk $i = \sqrt{-1}$; fn $|2z - 1| = |z - 2|$ rks z dk fclnq i Fk gksk&

(a) 0 (b) n h? kbÙk

(c) vfrijoy; (d) dkbz ugha

103. ; fn $z = fof(x)$ tgk $f(x) = x^2$ rks $\frac{dz}{dx}$ cjkj gksk&

(a) x^3 (b) $2x^3$

(c) $4x^3$ (d) $4x^2$

104. fuEu dFuka ij fopkj dhft, &

I. Qyu $f(x) = \sqrt[3]{x}$, $x = 0$ dks NkMedj l Hkh fclnq/ka ij l rr-gkskA

II. Qyu $f(x) = [x]$, $x = 3.99$ ij l rr-gksk tgk $[x] \rightarrow G.I.F.$

fuEu eal s d k l k @ l s l R; g&

(a) dØy 1 (b) dØy 2

(c) nksuka (d) dkbz ugha

105. 0Ø $y = \sin^{-1}(\sin^2x)$ ij $x = 0$ ij [kph xbZ Li "kj [k dh iØ.krk g&

(a) 0 (b) 1

(c) 2 (d) dkbz ugha

106. nks xkyka $x^2 + y^2 + z^2 - 4y + 3 = 0$ rFkk $x^2 + y^2 + z^2 + 2x + 4z - 4 = 0$ ds dHkh ds e/; dh njh gksk&

(a) 5 (b) 4

(c) 3 (d) 2

92. Jskh ${}^nC_1, {}^nC_2, {}^nC_3, \dots, {}^nC_n$ dk l ekUrj ek/; gksk&

(a) $\frac{2^n - 1}{n}$ (b) $\frac{2^n}{n+1}$

(c) $\frac{2^n}{n}$ (d) $\frac{2^{n+1}}{n+1}$

93. , d pj yftl dk eku 2, 3, 4, 2, 5, 4, 3, 2 rFkk 1 eku xg.k djrk gS rks cgyd gksk&

(a) 2 (b) 3

(c) 4 (d) 5

94. v0; ofLFkr vkadMs dsi R; d i f.k.k dk i j.k σ^2 gS bl sn l s xqk fd; k tkrk gA rks u; s l epp; dk i j.k D; k gksk&

(a) σ^2 (b) $n^2\sigma^2$

(c) $n\sigma^2$ (d) $\frac{\sigma^2}{n}$

95. ; fn $\sum_{i=1}^n (x_i - 2) = 110, \sum_{i=1}^n (x_i - 5) = 20$ rks ek/; D; k gksk&

(a) $\frac{11}{2}$ (b) $\frac{2}{11}$

(c) $\frac{17}{3}$ (d) $\frac{17}{9}$

96. nks l [; ; kvka $(11110)_2$ rFkk $(1010)_2$ dk ; l s x gksk&

(a) $(101000)_2$ (b) $(110000)_2$

(c) $(100100)_2$ (d) $(101100)_2$

97. ekuk s l Hkh i w k d k s dk l epp; gA s ij , d l Ecl/k R bl izdkj gS fd aRb ; fn $a \geq b$ tgl; $a, b \in S^+$ rks g&

(a) Lory; ; ijUrqu l efer vj l Øed

(b) Lory; ; l efer ijUrqu l Øed ugha

(c) r; ; rk l Ecl/k

(d) l efer ijUrqu rks Lory; ; vj u gh l Øed

98. l ehdj.k $2a^2x^2 - 2abx + b^2 = 0$ ds ey tc $a < 0$ rFkk $b > 0$.

(a) dHkh l ffeJ

(b) l nØ vijfes

(c) l nØ l ffeJ

(d) l nØ okLrfod

99. iFke 20 ik-frd l [; ; kvka dsoxk d k ek/; gksk&

(a) 151.5 (b) 143.5

(c) 65 (d) 72

100. p, q, r, s rFkk t i k p l [; ; k, j bl izdkj gS fd p, q rFkk r dk vj r 5 gS rFkk s vj t dk vj r 10 gS rks l Hkh i k p l [; ; kvka dk vj r gksk&

(a) 7.75 (b) 7.5

(c) 7 (d) 5

101. nks pj x rFkk y grq nks l ekJ; . k xqk d byx = 3/2 rFkk bxy = -1/6 gS rks x rFkk y ds e/; l gl ek xqk d g&

(a) -1/4 (b) 1/4

(c) -1/2 (d) 1/2

102. ekuk $z = x + iy$ tgl; x, y okLrfod pj gS rFkk $i = \sqrt{-1}$; fn $|2z - 1| = |z - 2|$ rks z dk fclnq i Fk gksk&

(a) oÙk (b) nh?k bÙk

(c) vfrijoy; (d) dkbz ugha

103. ; fn $z = fof(x)$ tgl; $f(x) = x^2$ rks $\frac{dz}{dx}$ cjkj gksk&

(a) x^3 (b) $2x^3$

(c) $4x^3$ (d) $4x^2$

104. fuEu dFuka ij fopkj dhft, &

I. Qyu $f(x) = \sqrt[3]{x}$, $x = 0$ dks NkMedj l Hkh fclnq/ka ij l rr-gkskA

II. Qyu $f(x) = [x]$, $x = 3.99$ ij l rr-gxsk tgl; $[x] \rightarrow$ G.I.F.

fuEu eal s d k l k @ l s l R; g&

(a) dØy 1 (b) dØy 2

(c) nksuka (d) dkbz ugha

105. oØ $y = \sin^{-1}(\sin^2x)$ ij $x = 0$ ij [kph xbZ Li "k [k dh iØ.krk g&

(a) 0 (b) 1

(c) 2 (d) dkbz ugha

106. nks xlyka $x^2 + y^2 + z^2 - 4y + 3 = 0$ rFkk $x^2 + y^2 + z^2 + 2x + 4z - 4 = 0$ ds dHkh ds e/; dh njh gksk&

(a) 5 (b) 4

(c) 3 (d) 2

107. The number of solution of the equation $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ is:

- (a) 2 (b) 3
(c) 1 (d) none

108. Out of 7 consonents and 4 vowels words are to be formed by involving 3 consonents and 2 vowels. The number of such words formed is:

- (a) 25200 (b) 22500
(c) 10080 (d) 5040

109. The number 251 in decimal system is expressed in binary system:

- (a) 11110111 (b) 11111011
(c) 11111101 (d) 11111110

110. What is the argument of the complex number $\frac{(1+i)(2+i)}{3-i}$ where $i = \sqrt{-1}$:

- (a) 0 (b) $\frac{\pi}{4}$
(c) $-\frac{\pi}{4}$ (d) $\frac{\pi}{2}$

111. The determinant of an odd order skew symmetric matrix is always:

- (a) zero (b) one
(c) negative (d) none

112. For what values of x is

$$\log_{10} \left(999 + \sqrt{x^2 - 3x + 2} \right) = 3 ?$$

- (a) 0 (b) 1
(c) 2 (d) 1, 2

113. The value of $\log_{5\sqrt{5}}(5)$ is:

- (a) $2/3$ (b) $1/3$
(c) $1/2$ (d) 2

114. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then value of r is:

- (a) 3 (b) 4
(c) 5 (d) 8

115. If $f(x) = \begin{cases} \frac{1-\cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ is continuous at

$x = 0$, then value of k is:

- (a) 0 (b) $1/2$
(c) $1/4$ (d) $-1/2$

Direction: For the next three items that follow:

Consider $x = \frac{3at}{1+t^3}$, $y = \frac{3at^2}{1+t^3}$ then,

116. The value of $\frac{dx}{dt}$ is:

- (a) $\frac{5a}{1+t^2}$ (b) $\frac{2a}{(1+t^3)^2}$
(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) none of these

117. The value of $\frac{dy}{dt}$ is:

- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) none of these

118. The value of $\frac{dy}{dx}$ at $t = 1/2$ is:

- (a) $5/4$ (b) $2/3$
(c) $1/5$ (d) none of these

119. If $x + y = 12$, what is the maximum value of xy ?

- (a) 25 (b) 36
(c) 49 (d) 64

120. The function $f(x) = x^2 - 2x$ increases for all :

- (a) $x > -1$ only (b) $x < -1$ only
(c) $x > 1$ only (d) $x < 1$ only

107. The number of solution of the equation $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ is:

- (a) 2 (b) 3
(c) 1 (d) none

108. Out of 7 consonents and 4 vowels words are to be formed by involving 3 consonents and 2 vowels. The number of such words formed is:

- (a) 25200 (b) 22500
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109. The number 251 in decimal system is expressed in binary system:

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(c) negative (d) none

112. For what values of x is

$$\log_{10} \left(999 + \sqrt{x^2 - 3x + 2} \right) = 3 ?$$

- (a) 0 (b) 1
(c) 2 (d) 1, 2

113. The value of $\log_{5\sqrt{5}}(5)$ is:

- (a) $2/3$ (b) $1/3$
(c) $1/2$ (d) 2

114. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then value of r is:

- (a) 3 (b) 4
(c) 5 (d) 8

115. If $f(x) = \begin{cases} \frac{1-\cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ is continuous at

$x = 0$, then value of k is:

- (a) 0 (b) $1/2$
(c) $1/4$ (d) $-1/2$

Direction: For the next three items that follow:

Consider $x = \frac{3at}{1+t^3}$, $y = \frac{3at^2}{1+t^3}$ then,

116. The value of $\frac{dx}{dt}$ is:

- (a) $\frac{5a}{1+t^2}$ (b) $\frac{2a}{(1+t^3)^2}$
(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) none of these

117. The value of $\frac{dy}{dt}$ is:

- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) none of these

118. The value of $\frac{dy}{dx}$ at $t = 1/2$ is:

- (a) $5/4$ (b) $2/3$
(c) $1/5$ (d) none of these

119. If $x + y = 12$, what is the maximum value of xy ?

- (a) 25 (b) 36
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107. The number of solution of the equation $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ is:

- (a) 2 (b) 3
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108. Out of 7 consonents and 4 vowels words are to be formed by involving 3 consonents and 2 vowels. The number of such words formed is:

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110. What is the argument of the complex number $\frac{(1+i)(2+i)}{3-i}$ where $i = \sqrt{-1}$:

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111. The determinant of an odd order skew symmetric matrix is always:

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(c) negative (d) none

112. For what values of x is

$\log_{10}(999 + \sqrt{x^2 - 3x + 2}) = 3$?

- (a) 0 (b) 1
(c) 2 (d) 1, 2

113. The value of $\log_{5\sqrt{5}}(5)$ is:

- (a) 2/3 (b) 1/3
(c) 1/2 (d) 2

114. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then value of r is:

- (a) 3 (b) 4
(c) 5 (d) 8

115. If $f(x) = \begin{cases} \frac{1-\cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ is continuous at

$x = 0$, then value of k is:

- (a) 0 (b) 1/2
(c) 1/4 (d) -1/2

Direction: For the next three items that follow:

Consider $x = \frac{3at}{1+t^3}$, $y = \frac{3at^2}{1+t^3}$ then,

116. The value of $\frac{dx}{dt}$ is:

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117. The value of $\frac{dy}{dt}$ is:

- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) none of these

118. The value of $\frac{dy}{dx}$ at $t = 1/2$ is:

- (a) 5/4 (b) 2/3
(c) 1/5 (d) none of these

119. If $x + y = 12$, what is the maximum value of xy ?

- (a) 25 (b) 36
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107. The number of solution of the equation $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ is:

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108. Out of 7 consonents and 4 vowels words are to be formed by involving 3 consonents and 2 vowels. The number of such words formed is:

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- (a) 11110111 (b) 11111011
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112. For what values of x is

$$\log_{10} \left(999 + \sqrt{x^2 - 3x + 2} \right) = 3 ?$$

- (a) 0 (b) 1
(c) 2 (d) 1, 2

113. The value of $\log_{5\sqrt{5}}(5)$ is:

- (a) $2/3$ (b) $1/3$
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114. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then value of r is:

- (a) 3 (b) 4
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115. If $f(x) = \begin{cases} \frac{1-\cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ is continuous at

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Consider $x = \frac{3at}{1+t^3}$, $y = \frac{3at^2}{1+t^3}$ then,

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- (a) 2 (b) 3
(c) 1 (d) none

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(c) $-\frac{\pi}{4}$ (d) $\frac{\pi}{2}$

111. The determinant of an odd order skew symmetric matrix is always:

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112. For what values of x is

$$\log_{10} \left(999 + \sqrt{x^2 - 3x + 2} \right) = 3 ?$$

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114. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then value of r is:

- (a) 3 (b) 4
(c) 5 (d) 8

115. If $f(x) = \begin{cases} \frac{1-\cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ is continuous at

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(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) none of these

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- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) none of these

118. The value of $\frac{dy}{dx}$ at $t = 1/2$ is:

- (a) $5/4$ (b) $2/3$
(c) $1/5$ (d) none of these

119. If $x + y = 12$, what is the maximum value of xy ?

- (a) 25 (b) 36
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120. The function $f(x) = x^2 - 2x$ increases for all :

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107. The number of solution of the equation $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ is:

- (a) 2 (b) 3
(c) 1 (d) none

108. Out of 7 consonents and 4 vowels words are to be formed by involving 3 consonents and 2 vowels. The number of such words formed is:

- (a) 25200 (b) 22500
(c) 10080 (d) 5040

109. The number 251 in decimal system is expressed in binary system:

- (a) 11110111 (b) 11111011
(c) 11111101 (d) 11111110

110. What is the argument of the complex number $\frac{(1+i)(2+i)}{3-i}$ where $i = \sqrt{-1}$:

- (a) 0 (b) $\frac{\pi}{4}$
(c) $-\frac{\pi}{4}$ (d) $\frac{\pi}{2}$

111. The determinant of an odd order skew symmetric matrix is always:

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112. For what values of x is

$$\log_{10} \left(999 + \sqrt{x^2 - 3x + 2} \right) = 3 ?$$

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(c) 2 (d) 1, 2

113. The value of $\log_{5\sqrt{5}}(5)$ is:

- (a) $2/3$ (b) $1/3$
(c) $1/2$ (d) 2

114. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then value of r is:

- (a) 3 (b) 4
(c) 5 (d) 8

115. If $f(x) = \begin{cases} \frac{1-\cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ is continuous at

$x = 0$, then value of k is:

- (a) 0 (b) $1/2$
(c) $1/4$ (d) $-1/2$

Direction: For the next three items that follow:

Consider $x = \frac{3at}{1+t^3}$, $y = \frac{3at^2}{1+t^3}$ then,

116. The value of $\frac{dx}{dt}$ is:

- (a) $\frac{5a}{1+t^2}$ (b) $\frac{2a}{(1+t^3)^2}$
(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) none of these

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- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
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118. The value of $\frac{dy}{dx}$ at $t = 1/2$ is:

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- (a) 25 (b) 36
(c) 49 (d) 64

120. The function $f(x) = x^2 - 2x$ increases for all :

- (a) $x > -1$ only (b) $x < -1$ only
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107. The number of solution of the equation $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ is:

- (a) 2 (b) 3
(c) 1 (d) none

108. Out of 7 consonents and 4 vowels words are to be formed by involving 3 consonents and 2 vowels. The number of such words formed is:

- (a) 25200 (b) 22500
(c) 10080 (d) 5040

109. The number 251 in decimal system is expressed in binary system:

- (a) 11110111 (b) 11111011
(c) 11111101 (d) 11111110

110. What is the argument of the complex number $\frac{(1+i)(2+i)}{3-i}$ where $i = \sqrt{-1}$:

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107. I ehdj .k $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ dsgyladh I $\frac{\pi}{4}$; k g&

- (a) 2 (b) 3
(c) 1 (d) dkbz ugha

108. 7 0; at dka RkFk 5 Lojka ea l s 3 0; at dka vksj 2 Lojka dks ysdj "kCn cukus g& bl izdkj ds "kCnka dh I $\frac{\pi}{4}$; k g&

- (a) 25200 (b) 22500
(c) 10080 (d) 5040

109. n"keyo i) fr ea l $\frac{\pi}{4}$; k 251 f}vk/kjh i) fr ea fy[kh tk; xh&

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(c) 11111101 (d) 11111110

110. I ffeJ I $\frac{\pi}{4}$; k $\frac{(1+i)(2+i)}{3-i}$ t gk; $i = \sqrt{-1}$ dk dkskad g&

- (a) 0 (b) $\frac{\pi}{4}$
(c) $-\frac{\pi}{4}$ (d) $\frac{\pi}{2}$

111. , d fo'ke dksV dh fo'ke I efer vk0; g dk I kjf.kd I nb g&

- (a) "kth; (b) , d
(c) __. kRed (d) dkbz ugha

112. x dsfdu ekuka grlj

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114. ; fn ${}^{15}C_{3r} = {}^{15}C_{r+3}$ rks r dk eku g&

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115. ; fn $f(x) = \begin{cases} \frac{1 - \cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ I rr gSx = 0 ij

rks k dk eku g&

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funz'k %vxys rhu i'uka grlj

; fn $x = \frac{3at}{1+t^3}, y = \frac{3at^2}{1+t^3}$ rks

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- (a) dby $x > -1$ (b) dby $x < -1$
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109. n"keyo i) fr ea l $\frac{1}{4}$; k 251 f}vk/kjh i) fr ea fy[kh tk; xh&

- (a) 11110111 (b) 11111011
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110. I ffeJ I $\frac{1}{4}$; k $\frac{(1+i)(2+i)}{3-i}$ t gk; $i = \sqrt{-1}$ dk dkskad g&

- (a) 0 (b) $\frac{\pi}{4}$
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111. , d fo'ke dksV dh fo'ke I efer vk0; g dk I kjf.kd I nb g&

- (a) "kth; (b) , d
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113. $\log_{5\sqrt{5}}(5)$ dk eku g&

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114. ; fn ${}^{15}C_{3r} = {}^{15}C_{r+3}$ rks r dk eku g&

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116. $\frac{dx}{dt}$ dk eku g&

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118. $\frac{dy}{dx}$ dk eku t = 1/2 ij g&

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119. ; fn $x + y = 12$ rks xy dk vf/kdre eku g&

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115. ; fn $f(x) = \begin{cases} \frac{1 - \cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ I rr gSx = 0 ij

rks k dk eku g&

- (a) 0 (b) 1/2
(c) 1/4 (d) -1/2

funz'k %vxys rhu i'uka grlj

; fn $x = \frac{3at}{1+t^3}$, $y = \frac{3at^2}{1+t^3}$ rks

116. $\frac{dx}{dt}$ dk eku g&

- (a) $\frac{5a}{1+t^2}$ (b) $\frac{2a}{(1+t^3)^2}$
(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) dkbz ugha

117. $\frac{dy}{dt}$ dk eku g&

- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) dkbz ugha

118. $\frac{dy}{dx}$ dk eku t = 1/2 ij g&

- (a) 5/4 (b) 2/3
(c) 1/5 (d) dkbz ugha

119. ; fn $x + y = 12$ rks xy dk vf/kdre eku g&

- (a) 25 (b) 36
(c) 49 (d) 64

120. Qyu $f(x) = x^2 - 2x$ o/kku g& x dsfdu ekuka dsfy; s

- (a) dby $x > -1$ (b) dby $x < -1$
(c) dby $x > 1$ (d) dby $x < 1$

107. I ehdj .k $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ dsgyladh I $\frac{1}{4}$; k g&

- (a) 2 (b) 3
(c) 1 (d) dkbz ugha

108. 7 0; at dka RkFk 5 Lojka ea l s 3 0; at dka vksj 2 Lojka dks ysdj "kCn cukus g& bl izdkj ds "kCnka dh I $\frac{1}{4}$; k g&

- (a) 25200 (b) 22500
(c) 10080 (d) 5040

109. n"keyo i) fr ea l $\frac{1}{4}$; k 251 f}vk/kjh i) fr ea fy[kh tk; xh&

- (a) 11110111 (b) 11111011
(c) 11111101 (d) 11111110

110. I ffeJ I $\frac{1}{4}$; k $\frac{(1+i)(2+i)}{3-i}$ t gk; $i = \sqrt{-1}$ dk dkskad g&

- (a) 0 (b) $\frac{\pi}{4}$
(c) $-\frac{\pi}{4}$ (d) $\frac{\pi}{2}$

111. , d fo'ke dksV dh fo'ke I efer vk0; g dk I kjf.kd I nb g&

- (a) "kth; (b) , d
(c) __. kRed (d) dkbz ugha

112. x dsfdu ekuka grlj

$$\log_{10}(999 + \sqrt{x^2 - 3x + 2}) = 3$$

- (a) 0 (b) 1
(c) 2 (d) 1, 2

113. $\log_{5\sqrt{5}}(5)$ dk eku g&

- (a) 2/3 (b) 1/3
(c) 1/2 (d) 2

114. ; fn ${}^{15}C_{3r} = {}^{15}C_{r+3}$ rks r dk eku g&

- (a) 3 (b) 4
(c) 5 (d) 8

115. ; fn $f(x) = \begin{cases} \frac{1 - \cos x}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ I rr gSx = 0 ij

rks k dk eku g&

- (a) 0 (b) 1/2
(c) 1/4 (d) -1/2

funz'k %vxysrhu i'uka grlj

; fn $x = \frac{3at}{1+t^3}, y = \frac{3at^2}{1+t^3}$ rks

116. $\frac{dx}{dt}$ dk eku g&

- (a) $\frac{5a}{1+t^2}$ (b) $\frac{2a}{(1+t^3)^2}$
(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) dkbz ugha

117. $\frac{dy}{dt}$ dk eku g&

- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) dkbz ugha

118. $\frac{dy}{dx}$ dk eku t = 1/2 ij g&

- (a) 5/4 (b) 2/3
(c) 1/5 (d) dkbz ugha

119. ; fn $x + y = 12$ rks xy dk vf/kdre eku g&

- (a) 25 (b) 36
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- (a) dby $x > -1$ (b) dby $x < -1$
(c) dby $x > 1$ (d) dby $x < 1$

107. I ehdj .k $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$ dsgyladh I $\frac{\pi}{4}$; k g&

- (a) 2 (b) 3
(c) 1 (d) dkbz ugha

108. 7 0; at dka RkFk 5 Lojka ea l s 3 0; at dka vksj 2 Lojka dks ysdj "kcn cukus g& bl izdkj ds "kcnka dh I $\frac{\pi}{4}$; k g&

- (a) 25200 (b) 22500
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109. n"keyo i) fr ea l $\frac{\pi}{4}$; k 251 f}vk/kjh i) fr ea fy[kh tk; xh&

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- (a) 0 (b) $\frac{\pi}{4}$
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111. , d fo'ke dksV dh fo'ke I efer vk0; g dk I kjf.kd I nb g&

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$$\log_{10}(999 + \sqrt{x^2 - 3x + 2}) = 3$$

- (a) 0 (b) 1
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- (a) 2/3 (b) 1/3
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114. ; fn ${}^{15}C_{3r} = {}^{15}C_{r+3}$ rks r dk eku g&

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funz'k %vxysrhu i'l'uka grlj

; fn $x = \frac{3at}{1+t^3}$, $y = \frac{3at^2}{1+t^3}$ rks

116. $\frac{dx}{dt}$ dk eku g&

- (a) $\frac{5a}{1+t^2}$ (b) $\frac{2a}{(1+t^3)^2}$
(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) dkbz ugha

117. $\frac{dy}{dt}$ dk eku g&

- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) dkbz ugha

118. $\frac{dy}{dx}$ dk eku t = 1/2 ij g&

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118. $\frac{dy}{dx}$ dk eku t = 1/2 ij g&

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rks k dk eku g&

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funz'k %vxysrhu i'uka grlj

; fn $x = \frac{3at}{1+t^3}, y = \frac{3at^2}{1+t^3}$ rks

116. $\frac{dx}{dt}$ dk eku g&

- (a) $\frac{5a}{1+t^2}$ (b) $\frac{2a}{(1+t^3)^2}$
(c) $\frac{3a(1-2t^3)}{(1+t^3)^2}$ (d) dkbz ugha

117. $\frac{dy}{dt}$ dk eku g&

- (a) $\frac{5t}{1+t^3}$ (b) $\frac{3at(2-t^3)}{(1+t^3)^2}$
(c) $\frac{7at}{1+t}$ (d) dkbz ugha

118. $\frac{dy}{dx}$ dk eku t = 1/2 ij g&

- (a) 5/4 (b) 2/3
(c) 1/5 (d) dkbz ugha

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- (a) dby $x > -1$ (b) dby $x < -1$
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SPACE FOR ROUGH WORK

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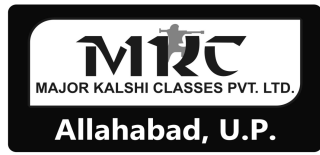
SPACE FOR ROUGH WORK

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK



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"A way to get commissioned"

MOCK TEST - NDA/NA

ijh{k.k i qLrdk
xf.kr

l e; % nks?k. Vsvkj rhl feuv

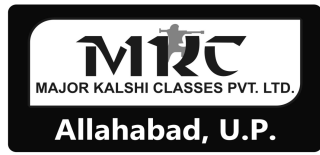
i wkkd % 300

vups'k

- 1- ijh{k.k i kjEHk gkusdsrjUr ckn] vki bl ijh{k.k i qLrdk dh iMfky vo"; dj yafd bl eadkbZfcuk Niki QV; k NWk gpk i "B vFkok i'Zukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k i qLrdk l scny yhfT, A
- 2- -i ; k /; ku j [kafd OMR mYkj&i=d e] mfor LFku ij] jky uecj vS ijh{k.k i qLrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pwl ; k fol xfr dshkjusvS dWc) djusdh fTeenkjh mehnokj dh gA fd l h Hk i d k j dh pwl@fol xfr dh fLFkr eamYkj&i=d fujLr dj fn; k tk; xkA
- 3- bl ijh{k.k i qLrdk ij l kFk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk gA ijh{k.k i qLrdk ij vS dN u fy [kA
- 4- bl ijh{k.k i qLrdk eady 120 i'Zukad i'Zu 1/2 fn, x, gA iR; d i'Zukad fgUnh vS vaxsh nkskaeaNik gA iR; d i'Zukad eapkj iR; Ykj mYkj 1/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj&i=d ij vidr djuk pgrs gA ; fn vki dks , d k yxsf d , d l s vf/kd iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yxk iR; d i'Zukad dsfy, dgy , d gh iR; Ykj p u k gA
- 5- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj&i=d ij gh vidr djugA mRj&i=d eafn, x, funS k nS [k, A
- 6- l Hk i'Zukakka ds vad l eku gA
- 7- bl l sigysd vki ijh{k.k i qLrdk ds foHku i'Zukakka ds iR; Rj mRj&i=d ij vidr djuk "kq dj] vki dks i dS k iek.k&i= ds l kFk i f'kr vups'kka ds vuD kj dN foj .k mRj&i=d ean us gA
- 8- vki vius l Hk iR; Rj k dks mRj&i=d eahkjus ds ckn rFk ijh{k.k ds l eki u ij dgy mRj&i=d v/hk d dks l k nA vki dks vius l kFk ijh{k.k i qLrdk ys tkus dh vufer gA
- 9- dPpsdke dsfy, i=d ijh{k.k i qLrdk ds vUr eal yXu gA
- 10- **xyr mRj k dsfy, n.M %**
olr'u' B i'Zu&i=k eamEhnokj }kjk fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - (i) iR; d i'Zu dsfy, plj d fVir mRj gA mehnokj }kjk iR; d i'Zu dsfy, fn, x, , d xyr mRj dsfy, i'Zu g rfu; r fd, x, vadkad , d&frgk bZ n.M ds: i eadVk tk, xkA
 - (ii) ; fn dkbZ mehnokj , d l svf/kd mRj nsk gS rksbl sxyr mYkj ekuk tk, xk] ; | fi fn, x, mYkj k eal s, d mYkj l gh gkrk gS fQj Hk ml i'Zu dsfy, mi ; RkuD kj gh ml h rjg dk n.M fn; k tk, xkA
 - (iii) ; fn mehnokj }kjk dkbZ i'Zu gy ughaf; k tkrk gS vFkr-mehnokj }kjk mYkj ughafn; k tkrk gS rksml & i'Zu dsfy, **dkbZ n.M ughafn**; k tk, xkA

tc rd vki dks; g ijh{k.k i qLrdk [kysudksu dgk tk, rc rd u [kya

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MOCK TEST - NDA/NA

ijh{k.k iqlrdk
xf.kr

l e; % nks?k. Vsvlj rhI feul

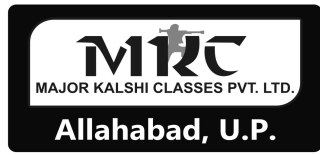
i wkkd % 300

vupsk

- ijh{k.k i kJEhk gkusdsrjUr ckn] vki bl ijh{k.k iqlrdk dh iMfky vo"; dj yafd bl eadkbZfcuk Ni k] QV; k NWk gpk i "B vFkok i'Zukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k iqlrdk l scny yhfT, A
- i ; k /; ku j [kafd OMR mYk&i=d e] mfr LFku ij] jky uecj vS ijh{k.k iqlrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fEenkh mEhnokj dh gA fd l h Hk i d k j dh pd@fol xfr dh fLFkr eamYk&i=d fujLr dj fn; k tk; xkA
- bl ijh{k.k iqlrdk ij l kfk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- bl ijh{k.k iqlrdk eady 120 i'Zukad i'Zu½fn, x, gA iR; d i'Zukad fgluh vS vaxth nkskaeaNik gA iR; d i'Zukad eapkj iR; Ykj mYk½ fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYk&i=d ij vidr djuk pgrs gA ; fn vki dks , d k yxsf d , d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yx A iR; d i'Zukad dsfy, d o y , d gh iR; Ykj p u k gA
- vki dks vius l Hk iR; Rj v y x l s fn, x, mRj&i=d ij gh vidr d j u s g A mRj&i=d eafn, x, funS k n s [k, A
- l Hk i'Zukakka ds vd l eku gA
- bl l sigysd vki ijh{k.k iqlrdk ds foHku i'Zukakka ds iR; Rj mRj&i=d ij vidr djuk "kq dj] vki dks i d S k i e k . k & i = d s l k f k i f k r v u p s k k a d s v u d k j d n f o o j . k m R j & i = d e a n u s g A
- vki vius l Hk iR; Rj k d k s m R j & i = d e a H k j u s d s c k n r F k k i j h { k k d s l e k i u i j d o y m R j & i = d v / h { k d d k s l k a n A v k i d k s v i u s l k f k i j h { k . k i q l r d k y s t k u s d h v u e f r g A
- d P p s d k e d s f y , i = d i j h { k . k i q l r d k d s v l r e a l y X u g A
- xyr mRj&dsfy, n.M %**
oLrfu' B i'Zu&i=kaeamEhnokj }kjk fn, x, xyr mYk&dsfy, n.M fn; k tk, xkA
 - iR; d i'Zu dsfy, plj o d f y i r m R j g A m E h n o k j } k j k i R ; d i'Zu dsfy, fn, x, , d x y r m R j d s f y , i'Zu g r a f u ; r f d , x, v a k a d k , d & f r g k b z n . M d s : i e a d k V k t k , x k A
 - ; fn d k b z m E h n o k j , d l s v f / k d m R j n s k g S r k s b l s x y r m Y k e k u k t k , x k j ; | f i f n , x , m Y k j k a e a l s , d m Y k j l g h g k r k g S f O j H k h m l i'Zu dsfy, m i ; R k u d k j g h m l h r j g d k n . M f n ; k t k , x k A
 - ; fn m E h n o k j } k j k d k b z i'Zu g y u g h a f d ; k t k r k g S v F k k r - m E h n o k j } k j k m Y k j u g h a f n ; k t k r k g S r k s m l & i'Zu dsfy, d k b z n . M u g h a f n ; k t k , x k A

tc rd vki dls; g ijh{k.k iqlrdk [kkyusdksu dgk tk, rc rd u [kkyA

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"A way to get commissioned"

MOCK TEST - NDA/NA

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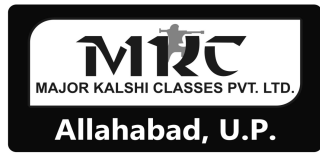
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vupsk

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- i ; k /; ku j [kafd OMR mYkj & i = d e] mfr LFku ij] jky uecj vS ijh{k.k iqlrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fTeenkjh mehnokj dh gA fd l h Hk i d k j dh pd@fol xfr dh fLFkr eamYkj & i = d fujLr dj fn; k tk; xkA
- bl ijh{k.k iqlrdk ij l kfk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- bl ijh{k.k iqlrdk eady 120 i'Zukad i'Zu 1/2 fn, x, gA iR; d i'Zukad fgUnh vS vaxsh nkskaeaNik gA iR; d i'Zukad eapkj iR; Ykj mYkj 1/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks, d k yxsf d, d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yx A iR; d i'Zukad dsfy, d o y, d gh iR; Ykj p u k gA
- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj & i = d ij gh vidr djugA mRj & i = d eafn, x, funsk ns [k, A
- l Hk i'Zukakka ds vad l eku gA
- bl l sigysd vki ijh{k.k iqlrdk dsfoHku i'Zukakka ds iR; Rj mRj & i = d ij vidr djuk "kq dj] vki dks i dsk iek.k & i = ds l kfk i fkr vupskka ds vu d kj dN fooj.k mRj & i = d eanus gA
- vki vius l Hk iR; Rj k dks mRj & i = d eahkjus ds ckn rFk ijh{k.k ds l eki u ij d o y mRj & i = d v / h / k d dks l ka nA vki dks vius l kfk ijh{k.k iqlrdk ys tkusdh vufer gA
- dPpsdke dsfy, i = d ijh{k.k iqlrdk ds vUr eal yXu gA
- xyr mRj k dsfy, n.M %**
olrfu' B i'Zu & i = k eamEhnokj } j k j fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - iR; d i'Zu dsfy, plj odfVir mRj gA mehnokj } j k j iR; d i'Zu dsfy, fn, x, , d xyr mRj dsfy, i'Zu g r f u ; r fd, x, v d k a d k , d & r g k b z n.M ds: i eadkV k tk, xkA
 - ; fn dkbZ mehnokj , d l s v f / k d mRj n s k g S r k s b l s x y r m Y k j e k u k t k , x k j ; | f i f n , x , m Y k j k a e a l s , d m Y k j l g h g k r k g S f Q j H k h m l i'Zu dsfy, m i ; R k u d k j g h m l h r j g d k n . M f n ; k t k , x k A
 - ; fn mehnokj } j k j d k b z i'Zu g y u g h a f d ; k t k r k g S v F k k r - m e h n o k j } j k j m Y k j u g h a f n ; k t k r k g S r k s m l & i'Zu dsfy, d k b z n . M u g h a f n ; k t k , x k A

tc rd vki dks; g ijh{k.k iqlrdk [kysudksu dgk tk, rc rd u [kya

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MAJOR KALSHI CLASSES PVT. LTD.

"A way to get commissioned"

MOCK TEST - NDA/NA

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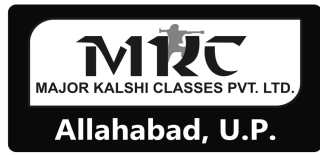
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vups'k

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- i ; k /; ku j [kafd OMR mYkj&i=d e] mfor LFku ij] jky uecj v\$ ijh{k.k i qLrdk vu@e A, B, C ; k D dk\$ /; ku l s, oafcuk fd l h pwl ; k fol xfr dshkjusv\$ dWc) djusdh fTeenkjh mEhnokj dh gA fd l h Hkh i dklj dh pwl@fol xfr dh fLFkr eamYkj&i=d fujLr dj fn; k tk; xkA
- bl ijh{k.k i qLrdk ij l kFk eafn, x, dksBd eavki dksviuk vu@ekad fy [kuk
- bl ijh{k.k i qLrdk eadty 120 i'ukad i'z'u/2fn, x, gA iR; d i'ukad fgUnh v\$ vax\$ h nkskaeaNik gA iR; d i'ukad eapkj iR; Ykj mYkj/2 fn, x, gA buea l s, d iR; Ykj dks ppu y] ft l s vki mYkj&i=d ij vidr djuk pgrs gA ; fn vki dks, d k yxsf d, d l s v\$ /k d iR; Ykj l gh g\$ rksml iR; Ykj dks vidr dja tks vki dks l ok\$ ke yx\$ iR; d i'ukad dsfy, dpy , d gh iR; Ykj ppuuk gA
- vki dks vius l Hkh iR; Rrj vyx l sfn, x, mRrj&i=d ij gh vidr djus gA mRrj&i=d eafn, x, fun\$ k n\$ [k, A
- l Hkh i'uk\$ kka ds vad l eku gA
- bl l sigysd vki ijh{k.k i qLrdk dsfofHku i'uk\$ kka ds iR; Rrj mRrj&i=d ij vidr djuk "kq dj] vki dks i d\$ k iek.k&i= ds l kFk i f'kr vups'kka ds vuq kj dN fooj.k mRrj&i=d ean\$ us gA
- vki vius l Hkh iR; Rrj k dks mRrj&i=d eahkjus ds ckn rFk ijh{k.k ds l eki u ij dpy mRrj&i=d v/h\$ kd dks l k\$ n\$ vki dks vius l kFk ijh{k.k i qLrdk ys tkus dh vu@fr gA
- dPpsdke dsfy, i=d ijh{k.k i qLrdk ds vUr eal yXu gA
- xyr mRrj k dsfy, n.M %**
olr' u' B i'z'u&i=kaeamEhnokj }kjk fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - iR; d i'z'u dsfy, plj odfVir mRrj gA mEhnokj }kjk iR; d i'z'u dsfy, fn, x, , d xyr mRrj dsfy, i'z'u graqfu; r fd, x, vadk\$ d, d&frgk\$ n.M ds: i eadkV\$ tk, xkA
 - ; fn dkbZ mEhnokj , d l svf/kd mRrj nrk g\$ rksbl sxyr mYkj ekuk tk, xk] ; | fi fn, x, mYkj kaea l s, d mYkj l gh gkrk g\$ fQj Hkh ml i'z'u dsfy, mi ; Rrkuq kj gh ml h rjg dk n.M fn; k tk, xkA
 - ; fn mEhnokj }kjk dkbZ i'z'u gy ughafd; k tkrk g\$ vFkr-mEhnokj }kjk mYkj ughafn; k tkrk g\$ rksml & i'z'u dsfy, **dkbZ n.M ughafn**; k tk, xkA

tc rd vki dks; g ijh{k.k i qLrdk [kysudksu dgk tk, rc rd u [kya

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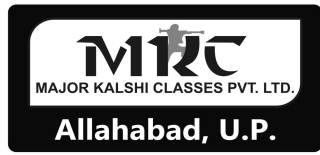
i wkkd % 300

vups'k

- ijh{k.k i kjEHk gkusdsrjUr ckn] vki bl ijh{k.k i qLrdk dh iMfky vo"; dj yafd bl eadkbZfcuk Ni kj QV; k NWk gpk i "B vFkok i'Zukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k i qLrdk l scny yhfT, A
- i ; k /; ku j [kafd OMR mYkj & i = d e] mfr LFku ij jky uecj vS ijh{k.k i qLrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fTeenkjh mehnokj dh gA fd l h Hk i d kj dh pd@fol xfr dh fLFkr eamYkj & i = d fujLr dj fn; k tk; xkA
- bl ijh{k.k i qLrdk ij l kFk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- bl ijh{k.k i qLrdk eady 120 i'Zukad i'Zu 1/2 fn, x, gA iR; d i'Zukad fgluh vS vaxsh nkskaeaNik gA iR; d i'Zukad eapkj iR; Ykj 1/2 mYkj 1/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks , d k yxsf d , d l s vf/kd iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yxk iR; d i'Zukad dsfy, dgy , d gh iR; Ykj p u k gA
- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj & i = d ij gh vidr djugA mRj & i = d eafn, x, funsk ns [k, A
- l Hk i'Zukakka ds vd l eku gA
- bl l sigysd vki ijh{k.k i qLrdk ds foHku i'Zukakka ds iR; Rj mRj & i = d ij vidr djuk "kq dj] vki dks i dsk iek.k & i = d sl kFk i fkr vups'kka ds vu d kj dN fooj.k mRj & i = d eanugA
- vki vius l Hk iR; Rj k dks mRj & i = d eahkjus ds ckn rFk ijh{k.k ds l eku ij dgy mRj & i = d v/hkd dks l ka na vki dks vius l kFk ijh{k.k i qLrdk ys tkusdh vufer gA
- dPpsdke dsfy, i = d ijh{k.k i qLrdk ds vUr eal yXu gA
- xyr mRj k dsfy, n.M %**
olr'u' B i'Zu & i = k eamEhnokj }kjk fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - iR; d i'Zu dsfy, plj d fVir mRj gA mehnokj }kjk iR; d i'Zu dsfy, fn, x, , d xyr mRj dsfy, i'Zu g rfu; r fd, x, vdkad , d & frgk bZ n.M ds: i eadkV tk, xkA
 - ; fn dkbZ mehnokj , d l svf/kd mRj nsk gS rksbl sxyr mYkj ekuk tk, xk] ; | fi fn, x, mYkj k eal s, d mYkj l gh gkrk gS fQj Hk ml i'Zu dsfy, mi ; Rku d kj gh ml h rjg dk n.M fn; k tk, xkA
 - ; fn mehnokj }kjk dkbZ i'Zu gy ughaf; k tkrk gS vFkr-mehnokj }kjk mYkj ughafn; k tkrk gS rksml & i'Zu dsfy, **dkbZ n.M ughafn**; k tk, xkA

tc rd vki dks; g ijh{k.k i qLrdk [kysudksu dgk tk, rc rd u [kya

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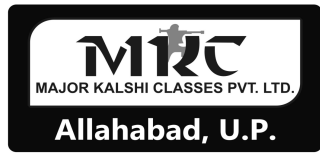
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vupsk

- ijh{k.k i jEhk gkusdsrjlr ckn] vki bl ijh{k.k iqlrdk dh iMfky vo"; dj yafd bl eadkbzfcuk Niki QV; k NWk gpk i "B vFkok i'ukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k iqlrdk l scny yhf t, A
- i ; k /; ku j [kafd OMR mYkj & i = d e] mfr LFku ij jky uecj vS ijh{k.k iqlrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fEenkh mEhnokj dh gA fd l h Hk i d kj dh pd@fol xfr dh fLFkr eamYkj & i = d fujLr dj fn; k tk; xkA
- bl ijh{k.k iqlrdk ij l kfk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- bl ijh{k.k iqlrdk eady 120 i'ukad i'z'u/2fn, x, gA iR; d i'ukad fgluh vS vaxth nkskaeNik gA iR; d i'ukad eapkj iR; Ykj mYkj/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks , d k yxsf d , d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yx A iR; d i'ukad dsfy, d o y , d gh iR; Ykj p u k gA
- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj & i = d ij gh vidr djugA mRj & i = d eafn, x, funsk ns [k, A
- l Hk i'ukakka ds vd l eku gA
- bl l sigysd vki ijh{k.k iqlrdk ds foHku i'ukakka ds iR; Rj mRj & i = d ij vidr djuk "kq dj] vki dks i dsk iek.k & i = ds l kfk i fkr vupskka ds vu d kj dN foj .k mRj & i = d eanus gA
- vki vius l Hk iR; Rj k dks mRj & i = d eahkjus ds ckn rFk ijh{k.k ds l eki u ij d o y mRj & i = d v / h / k d dks l k nA vki dks vius l kfk ijh{k.k iqlrdk ys tkusdh vufer gA
- dPpsdke dsfy, i = d ijh{k.k iqlrdk ds vlr eal yXu gA
- xyr mRj k dsfy, n.M %**
olr'u' B i'z'u & i = k eamEhnokj }kjk fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - iR; d i'z'u dsfy, plj odfVir mRj gA mEhnokj }kjk iR; d i'z'u dsfy, fn, x, , d xyr mRj dsfy, i'z'u g r q u ; r fd, x, v d k a d k , d & r g k b z n . M ds : i eadkV k tk, xkA
 - ; fn dkbz mEhnokj , d l s v f / k d mRj n r k g S r k s b l s x y r m Y k j e k u k t k , x k j ; | f i f n , x , m Y k j k a e a l s , d m Y k j l g h g k r k g S f Q j H k h m l i'z'u dsfy, m i ; R k u d k j g h m l h r j g d k n . M f n ; k t k , x k A
 - ; fn mEhnokj }kjk dkbz i'z'u gy ughaf; k tkrk gS vFkr - mEhnokj }kjk mYkj ughafn; k tkrk gS rksml & i'z'u dsfy, d k b z n . M u g h a f n ; k t k , x k A

tc rd vki dls; g ijh{k.k iqlrdk [kysudksu dgk tk, rc rd u [kya

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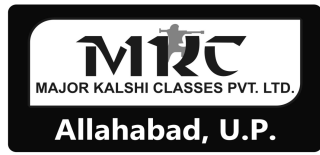
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vups'k

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- bl ijh{k.k i qLrdk ij l kFk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- bl ijh{k.k i qLrdk eady 120 i'Zukad i'Zu 1/2 fn, x, gA iR; d i'Zukad fgUnh vS vaxsh nkskaeaNik gA iR; d i'Zukad eapkj iR; Ykj 1/2 mYkj 1/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks, d k yxsf d, d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yx A iR; d i'Zukad dsfy, d o y, d gh iR; Ykj p u k gA
- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj & i = d ij gh vidr djugA mRj & i = d eafn, x, funS k nS [k, A
- l Hk i'Zukakka ds vad l eku gA
- bl l sigysd vki ijh{k.k i qLrdk ds foHku i'Zukakka ds iR; Rj mRj & i = d ij vidr djuk "kq dj] vki dks i dS k i e k . k & i = d s l kFk i f'kr vups'ka ds vu d kj dN fooj . k mRj & i = d eanus gA
- vki vius l Hk iR; Rj k dks mRj & i = d eahkjus ds ckn rFk ijh{k.k ds l eku ij d o y mRj & i = d v / h / k d dks l k n A vki dks vius l kFk ijh{k.k i qLrdk ys tkusdh vufer gA
- dPpsdke dsfy, i = d ijh{k.k i qLrdk ds vUr eal yXu gA
- xyr mRj k dsfy, n.M %**
olr' u 'B i'Zu & i = k eamEhnokj } j k j fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - iR; d i'Zu dsfy, plj o d fVir mRj gA mehnokj } j k j iR; d i'Zu dsfy, fn, x, , d xyr mRj dsfy, i'Zu g r q u ; r fd, x, v d k a d k , d & f r g k b z n . M ds : i e a d k v k t k , x k A
 - ; fn d k b z m e h n o k j , d l s v f / k d m R j n s k g S r k s b l s x y r m Y k j e k u k t k , x k j ; | f i f n , x , m Y k j k a e a l s , d m Y k j l g h g k r k g S f Q j H k h m l i'Zu dsfy, m i ; R k u d k j g h m l h r j g d k n . M f n ; k t k , x k A
 - ; fn m e h n o k j } j k j d k b z i'Zu g y u g h a f d ; k t k r k g S v F k k r - m e h n o k j } j k j m Y k j u g h a f n ; k t k r k g S r k s m l & i'Zu dsfy, d k b z n . M u g h a f n ; k t k , x k A

tc rd vki dks; g ijh{k.k i qLrdk [kkyusdksu dgk tk, rc rd u [kkyA

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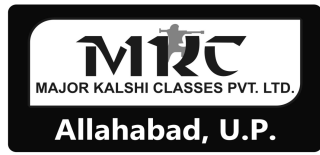
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vups'k

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- 2- -i ; k /; ku j [kafd OMR mYkj & i = d e] mfr LFku ij] jky uecj vS ijh{k.k iqlrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pwl ; k fol xfr dshkjusvS dWc) djusdh fTeenkjh mehnokj dh gA fd l h Hk i d k j dh pwl@fol xfr dh fLFkr eamYkj & i = d fujLr dj fn; k tk; xkA
- 3- bl ijh{k.k iqlrdk ij l kFk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- 4- bl ijh{k.k iqlrdk eady 120 i'Zukad i'Zu 1/2 fn, x, gA iR; d i'Zukad fgUnh vS vaxsh nkskaeaNik gA iR; d i'Zukad eapkj iR; Ykj mYkj 1/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks, d k yxsf d, d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okYe yx A iR; d i'Zukad dsfy, d o y, d gh iR; Ykj p u k gA
- 5- vki dks vius l Hk iR; Rj v y x l s fn, x, mRj & i = d ij gh vidr d j u s gA mRj & i = d eafn, x, funS k n s [k, A
- 6- l Hk i'Zukakka ds vad l eku gA
- 7- bl l sigysd vki ijh{k.k iqlrdk ds foHku i'Zukakka ds iR; Rj mRj & i = d ij vidr djuk "kq dj] vki dks i d s k i e k . k & i = d s l k Fk i f ' k r v u p s ' k a d s v u d k j d n f o o j . k m R j & i = d e a n u s g A
- 8- vki vius l Hk iR; Rj k d k s m R j & i = d e a H k j u s d s c k n r F k k i j h { k k d s l e k i u i j d o y m R j & i = d v / h { k d d k s l k a n A v k i d k s v i u s l k F k i j h { k . k i q l r d k y s t k u s d h v u e f r g A
- 9- d P p s d k e d s f y, i = d i j h { k . k i q l r d k d s v l r e a l y X u g A
- 10- **xyr mRj k d s f y, n . M %**
o l r f u ' B i ' z u & i = k a e a m e h n o k j } k j k f n, x, x y r m Y k j k d s f y, n . M f n ; k t k, x k A
(i) iR; d i'Zu dsfy, plj o d f v i r m R j g A m e h n o k j } k j k i R; d i'Zu dsfy, fn, x, , d x y r m R j d s f y, i'Zu g r a f u ; r f d, x, v a k a d k , d & f r g k b z n . M d s : i e a d k V k t k, x k A
(ii) ; fn d k b z m e h n o k j , d l s v f / k d m R j n s k g S r k s b l s x y r m Y k j e k u k t k, x k j ; | f i f n, x, m Y k j k a e a l s, d m Y k j l g h g k r k g S f Q j H k h m l i'Zu dsfy, m i ; R k u d k j g h m l h r j g d k n . M f n ; k t k, x k A
(iii) ; fn m e h n o k j } k j k d k b z i'Zu g y u g h a f d ; k t k r k g S v F k k r - m e h n o k j } k j k m Y k j u g h a f n ; k t k r k g S r k s m l & i'Zu dsfy, d k b z n . M u g h a f n ; k t k, x k A

tc rd vki dls; g ijh{k.k iqlrdk [kkyusdksu dgk tk, rc rd u [kkyA

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MOCK TEST - NDA/NA

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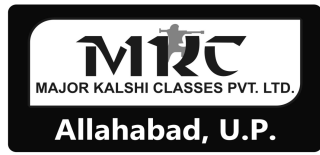
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vupsk

- ijh{k.k i jEhk gkusdsrjlr ckn] vki bl ijh{k.k iqlrdk dh iMfky vo"; dj yafd bl eadkbzfcuk Niki QV; k NWk gpk i "B vFkok i'ukad vkfn u gkA ; fn , d k g\$ rksbl sl gh ijh{k.k iqlrdk l scny yhf t, A
- i ; k /; ku j [kafd OMR mYkj & i = d e] mfr LFku ij jky uecj vj ijh{k.k iqlrdk vupe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvlg dWc) djusdh fEenkh mEhnokj dh gA fd l h Hkh idkj dh pd@fol xfr dh fLFkr eamYkj & i = d fujLr dj fn; k tk; xkA
- bl ijh{k.k iqlrdk ij l kfk eafn, x, dksBd eavki dksviuk vupekad fy [kuk
- bl ijh{k.k iqlrdk eady 120 i'ukad i'z'u/2fn, x, gA iR; d i'ukad fgluh vj vaxth nkskaeNik gA iR; d i'ukad eapkj iR; Ykj mYkj/2 fn, x, gA bua l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks , d k yxsf d , d l s vfk d iR; Ykj l gh g\$ rksml iR; Ykj dks vidr dja tks vki dks l okke yx A iR; d i'ukad dsfy, dgy , d gh iR; Ykj p u k gA
- vki dks vius l Hkh iR; Rrj vyx l sfn, x, mRrj & i = d ij gh vidr djugA mRrj & i = d eafn, x, funsk nf [k, A
- l Hkh i'ukakka ds vd l eku gA
- bl l sigysd vki ijh{k.k iqlrdk ds foHku i'ukakka ds iR; Rrj mRrj & i = d ij vidr djuk "kq dj] vki dks i dsk iek.k & i = ds l kfk i fkr vupskka ds vu d kj dN foj .k mRrj & i = d eanus gA
- vki vius l Hkh iR; Rrj k dks mRrj & i = d eahkjus ds ckn rFk ijh{k.k ds l eki u ij dgy mRrj & i = d v/hkd dks l ka nA vki dks vius l kfk ijh{k.k iqlrdk ys tkusdh vufer gA
- dPpsdke dsfy, i = d ijh{k.k iqlrdk ds vlr eal yXu gA
- xyr mRrj k dsfy, n.M %**
olrfu' B i'z'u & i = k eamEhnokj }kjk fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - iR; d i'z'u dsfy, plj odfvir mRrj gA mEhnokj }kjk iR; d i'z'u dsfy, fn, x, , d xyr mRrj dsfy, i'z'u g rfu; r fd, x, vdkad , d & frgbz n.M ds: i eadkV tk, xkA
 - ; fn dkbz mEhnokj , d l svfk d mRrj nrk g\$ rksbl sxyr mYkj ekuk tk, xk] ; | fi fn, x, mYkj kaeal s, d mYkj l gh gkrk g\$ fQj Hkh ml i'z'u dsfy, mi; Rrj k d kj gh ml h rjg dk n.M fn; k tk, xkA
 - ; fn mEhnokj }kjk dkbz i'z'u gy ughaf; k tkrk gsvFkr-mEhnokj }kjk mYkj ughafn; k tkrk g\$ rksml & i'z'u dsfy, **dkbz n.M ughafn**; k tk, xkA

tc rd vki dks; g ijh{k.k iqlrdk [kysudksu dgk tk, rc rd u [kya

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MOCK TEST - NDA/NA

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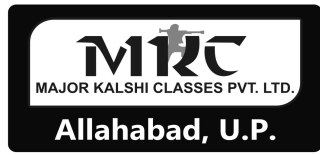
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vups'k

- ijh{k.k i kjEHk gkusdsrjUr ckn] vki bl ijh{k.k i qLrdk dh iMfky vo"; dj yafd bl eadkbZfcuk Ni kj OVk ; k NWk gpk i "B vFkok i z'ukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k i qLrdk l scny yhfT, A
- i ; k /; ku j [kafd OMR mYkj & i = d e] mfr LFku ij jky uecj vS ijh{k.k i qLrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fTeenkjh mehnokj dh gA fd l h Hk i d kj dh pd@fol xfr dh fLFkr eamYkj & i = d fujLr dj fn; k tk; xkA
- bl ijh{k.k i qLrdk ij l kfk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- bl ijh{k.k i qLrdk eady 120 i z'ukad i z'u 1/2 fn, x, gA iR; d i z'ukad fgluh vS vaxsh nkskaeaNik gA iR; d i z'ukad eapkj iR; Ykj mYkj 1/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks , d k yxsf d , d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yx A iR; d i z'ukad dsfy, d o y , d gh iR; Ykj p u k gA
- vki dks vius l Hk iR; Rj v y x l s fn, x, mRj & i = d ij gh vidr djugA mRj & i = d eafn, x, funS k nS [k, A
- l Hk i z'ukad k ds vd l eku gA
- bl l sigysd vki ijh{k.k i qLrdk ds foHku i z'ukad k ds iR; Rj mRj & i = d ij vidr djuk "kq d j j vki dks i d S k i e k . k & i = d s l kfk i f ' k r vups'ka ds vu d kj d n fooj . k mRj & i = d e a n u s g A
- vki vius l Hk iR; Rj k d s mRj & i = d e a Hk j u s d s c k n r Fk ijh{k.k d s l e k i u ij d o y mRj & i = d v / h / k d d s l k a n A vki dks vius l kfk ijh{k.k i qLrdk y s t k u s d h v u e f r g A
- d Ppsdke dsfy, i = d ijh{k.k i qLrdk ds vUr e a l y X u g A
- xyr mRj k ds fy, n.M %**
oLrfu' B i z' u & i = k e a m e h n o k j } k j k f n, x, x y r m Y k j k d s f y, n . M f n ; k t k, x k A
 - iR; d i z' u d s f y, p k j o d f v i r m R j g A m e h n o k j } k j k i R; d i z' u d s f y, f n, x, , d x y r m R j d s f y, i z' u g r a f u ; r f d, x, v a k a d k , d & f r g k b z n . M d s : i e a d k v k t k, x k A
 - ; f n d k b z m e h n o k j , d l s v f / k d m R j n s k g S r k s b l s x y r m Y k j e k u k t k, x k j ; | f i f n, x, m Y k j k a e a l s, d m Y k j l g h g k r k g S f O j H k h m l i z' u d s f y, m i ; D r k u d k j g h m l h r j g d k n . M f n ; k t k, x k A
 - ; f n m e h n o k j } k j k d k b z i z' u g y u g h a f d ; k t k r k g S v F k k r - m e h n o k j } k j k m Y k j u g h a f n ; k t k r k g S r k s m l & i z' u d s f y, d k b z n . M u g h a f n ; k t k, x k A

tc rd vki dls; g ijh{k.k i qLrdk [kkyusdksu dgk tk, rc rd u [kkyA

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MOCK TEST - NDA/NA

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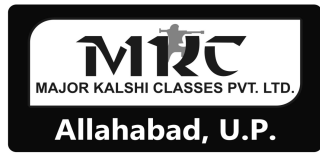
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vups'k

- 1- ijh{k.k i kjEHk gkusdsrjUr ckn] vki bl ijh{k.k i qLrdk dh iMfky vo"; dj yafd bl eadkbZfcuk Ni kj QV; k NWk gpk i "B vFkok i z'ukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k i qLrdk l scny yhfT, A
- 2- -i ; k /; ku j [kafd OMR mYkj & i = d e] mfr LFku ij jky uecj vS ijh{k.k i qLrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fTeenkjh mehnokj dh gA fd l h Hk i d kj dh pd@fol xfr dh fLFkr eamYkj & i = d fujLr dj fn; k tk; xkA
- 3- bl ijh{k.k i qLrdk ij l kFk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk gA ijh{k.k i qLrdk ij vS dN u fy [kA
- 4- bl ijh{k.k i qLrdk eady 120 i z'ukad i z'u 1/2 fn, x, gA iR; d i z'ukad fgUnh vS vaxsh nkskaeaNik gA iR; d i z'ukad eapkj iR; Ykj mYkj 1/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYkj & i = d ij vidr djuk pgrs gA ; fn vki dks , d k yxsf d , d l s vf/kd iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okke yxk iR; d i z'ukad dsfy, dgy , d gh iR; Ykj p u k gA
- 5- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj & i = d ij gh vidr djugA mRj & i = d eafn, x, funS k nS [k, A
- 6- l Hk i z'ukakka ds vd l eku gA
- 7- bl l sigysd vki ijh{k.k i qLrdk ds foHku i z'ukakka ds iR; Rj mRj & i = d ij vidr djuk "kq dj] vki dks i dS k iek.k & i = d sl kFk i f'kr vups'ka ds vuD kj dN foj .k mRj & i = d ean us gA
- 8- vki vius l Hk iR; Rj k dks mRj & i = d eahkjus ds ckn rFk ijh{k.k ds l eku ij dgy mRj & i = d v/hk d dks l k nA vki dks vius l kFk ijh{k.k i qLrdk ys tkusdh vufer gA
- 9- dPpsdke dsfy, i = d ijh{k.k i qLrdk ds vUr eal yXu gA
- 10- **xyr mRj k dsfy, n.M %**
olr'u' B i z'u & i = k eamEhnokj }kjk fn, x, xyr mYkj k dsfy, n.M fn; k tk, xkA
 - (i) iR; d i z'u dsfy, plj d fVir mRj gA mehnokj }kjk iR; d i z'u dsfy, fn, x, , d xyr mRj dsfy, i z'u g rfu; r fd, x, vdkadk , d & frgk bZ n.M ds: i eadkV tk, xkA
 - (ii) ; fn dkbZ mehnokj , d l svf/kd mRj nsk gS rksbl sxyr mYkj ekuk tk, xk] ; | fi fn, x, mYkj k eal s, d mYkj l gh gkrk gS fQj Hk ml i z'u dsfy, mi ; Rkud kj gh ml h rjg dk n.M fn; k tk, xkA
 - (iii) ; fn mehnokj }kjk dkbZ i z'u gy ughaf; k tkrk gS vFkr-mehnokj }kjk mYkj ughafn; k tkrk gS rksml & i z'u dsfy, dkbZ n.M ughafn; k tk, xkA

tc rd vki dks; g ijh{k.k i qLrdk [kysudksu dgk tk, rc rd u [kya

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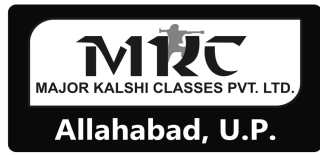
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vups'k

- 1- ijh{k.k i kJEHk gkusdsrjUr ckn] vki bl ijh{k.k iqlrdk dh iMfky vo"; dj yafd bl eadkbZfcuk Ni k] QV; k NWk gpk i "B vFkok i'Zukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k iqlrdk l scny yhfT, A
- 2- -i ; k /; ku j [kafd OMR mYk&i=d e] mfr LFku ij] jky uecj vS ijh{k.k iqlrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fEenkh mEhnokj dh gA fd l h Hk i d k j dh pd@fol xfr dh fLFkr eamYk&i=d fujLr dj fn; k tk; xkA
- 3- bl ijh{k.k iqlrdk ij l kFk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- 4- bl ijh{k.k iqlrdk eady 120 i'Zukad i'Zu½fn, x, gA iR; d i'Zukad fgluh vS vaxsh nkskaeaNik gA iR; d i'Zukad eapkj iR; Ykj mYk½ fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYk&i=d ij vidr djuk pgrs gA ; fn vki dks, d k yxsf d, d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okYe yx A iR; d i'Zukad dsfy, d o y , d gh iR; Ykj p u k gA
- 5- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj&i=d ij gh vidr djugA mRj&i=d eafn, x, funS k nS [k, A
- 6- l Hk i'Zukakka ds vd l eku gA
- 7- bl l sigysd vki ijh{k.k iqlrdk ds foHku i'Zukakka ds iR; Rj mRj&i=d ij vidr djuk "kq dj] vki dks i dS k i e k . k & i = d s l k Fk i f'kr vups'ka ds vu d k j d n fooj . k mRj&i=d e a n u s g A
- 8- vki vius l Hk iR; Rj k d s mRj&i=d e a Hk j u s d s c k n r Fk i j h { k k d s l e k i u i j d o y m R j & i = d v / h { k d d s l k a n A v k i d k s v i u s l k Fk i j h { k . k i q l r d k y s t k u s d h v u e f r g A
- 9- d Ppsdke dsfy, i=d ijh{k.k iqlrdk ds vUr eal yXu gA
- 10- **xyr mRj k dsfy, n.M %**
oLrfu' B i'Zu&i=k eamEhnokj }kjk fn, x, xyr mYk k dsfy, n.M fn; k tk, xkA
 - (i) iR; d i'Zu dsfy, plj o d f v i r m R j g A m E h n o k j } k j k i R; d i'Zu dsfy, fn, x, , d xyr mRj dsfy, i'Zu g r a f u ; r f d , x, v a k a d k , d & f r g k b z n . M d s : i e a d k V k t k , x k A
 - (ii) ; fn d k b z m E h n o k j , d l s v f / k d m R j n s k g S r k s b l s x y r m Y k j e k u k t k , x k j ; | f i f n , x , m Y k j k a e a l s , d m Y k j l g h g k r k g S f O j H k h m l i'Zu dsfy, m i ; D r k u d k j g h m l h r j g d k n . M f n ; k t k , x k A
 - (iii) ; fn m E h n o k j } k j k d k b z i'Zu g y u g h a f d ; k t k r k g S v F k k r - m E h n o k j } k j k m Y k j u g h a f n ; k t k r k g S r k s m l & i'Zu dsfy, d k b z n . M u g h a f n ; k t k , x k A

tc rd vki dls; g ijh{k.k iqlrdk [kkyusdksu dgk tk, rc rd u [kkyA

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- ijh{k.k i kJEHk gkusdsrjUr ckn] vki bl ijh{k.k iqlrdk dh iMfky vo"; dj yafd bl eadkbZfcuk Ni k] QV; k NWk gpk i "B vFkok i'ukad vkfn u gkA ; fn , d k gS rksbl sl gh ijh{k.k iqlrdk l scny yhfT, A
- i ; k /; ku j [kafd OMR mYk&i=d e] mfr LFku ij] jky uecj vS ijh{k.k iqlrdk vuDe A, B, C ; k D dk /; ku l s, oafcuk fd l h pd ; k fol xfr dshkjusvS dWc) djusdh fEenkh mEhnokj dh gA fd l h Hk i d k j dh pd@fol xfr dh fLFkr eamYk&i=d fujLr dj fn; k tk; xkA
- bl ijh{k.k iqlrdk ij l kFk eafn, x, dksBd eavki dksviuk vuDekad fy [kuk
- bl ijh{k.k iqlrdk eady 120 i'ukad i'z'u/2fn, x, gA iR; d i'ukad fgluh vS vaxth nkskaeaNik gA iR; d i'ukad eapkj iR; Ykj mYk/2 fn, x, gA buea l s, d iR; Ykj dks p u y ft l s vki mYk&i=d ij vidr djuk pgrs gA ; fn vki dks, d k yxsf d, d l s v f / k d iR; Ykj l gh gS rksml iR; Ykj dks vidr dja tks vki dks l okYe yx A iR; d i'ukad dsfy, d o y , d gh iR; Ykj p u k gA
- vki dks vius l Hk iR; Rj vyx l sfn, x, mRj&i=d ij gh vidr djugA mRj&i=d eafn, x, funsk ns [k, A
- l Hk i'ukakka ds vd l eku gA
- bl l sigysd vki ijh{k.k iqlrdk ds foHku i'ukakka ds iR; Rj mRj&i=d ij vidr djuk "kq dj] vki dks i dsk iek.k&i= ds l kFk i fkr vupskka ds vu d kj dN fooj.k mRj&i=d ean us gA
- vki vius l Hk iR; Rj k dks mRj&i=d eahkjus ds ckn rFk ijh{k.k ds l eki u ij d o y mRj&i=d v/hk d dks l k nA vki dks vius l kFk ijh{k.k iqlrdk ys tkus dh vufer gA
- dPpsdke dsfy, i=d ijh{k.k iqlrdk ds vUr ea l yXu gA
- xyr mRj k dsfy, n.M %**
olr'u' B i'z'u&i=kaeamEhnokj }kjk fn, x, xyr mYk k dsfy, n.M fn; k tk, xkA
 - iR; d i'z'u dsfy, plj odfVir mRj gA mEhnokj }kjk iR; d i'z'u dsfy, fn, x, , d xyr mRj dsfy, i'z'u g r q u ; r fd, x, v d k a d k , d & r g k b z n.M ds: i eadkV k tk, xkA
 - ; fn dkbZ mEhnokj , d l s v f / k d mRj n r k g S r k s b l s x y r m Y k j e k u k t k , x k j ; | f i f n , x , m Y k j k a e a l s , d m Y k j l g h g k r k g S f Q j H k h m l i'z'u dsfy, m i ; R k u d k j g h m l h r j g d k n.M f n ; k t k , x k A
 - ; fn mEhnokj }kjk dkbZ i'z'u gy ughaf d; k tkrk gS vFkr-mEhnokj }kjk mYk j ughaf n; k tkrk gS rksml & i'z'u dsfy, d k b z n.M ughaf n; k t k , x k A

tc rd vki dks; g ijh{k.k iqlrdk [kysudksu dgk tk, rc rd u [kya

Note : English version of the instructions is printed on the front cover of this Booklet.