# Straight Lines

**Subjects : Maths** **Previous Year Questions**

## Maths - Section A ( MCQ )

**1.** Let a circle pass through the origin and its centre be the point of intersection of two mutually perpendicular lines $x+(k-1)y+3=0$ and $2x+k^2y-4=0$. If the line $x-y+2=0$ intersects the circle at the points A and B, then $(AB)^2$ is equal to:

**A)** $10$ **B)** $27$ **C)** $18$ **D)** $34$

**2.** Let the mid points of the sides of a triangle $ABC$ be $\left(\frac{5}{2},7\right)$, $\left(\frac{5}{2},3\right)$ and $(4,5)$. If its incentre is $(h,k)$, then $3h+k$ is equal to :

**A)** $11$ **B)** $12$ **C)** $13$ **D)** $14$

**3.** Let the line $L_1 : x+3=0$ intersect the lines $L_2 : x-y=0$ and $L_3 : 3x+y=0$ at the points $A$ and $B$, respectively. Let the bisector of the obtuse angle between the lines $L_2$ and $L_3$ intersect the line $L_1$ at the point $C$. Then $BC^2 : AC^2$ is equal to:

**A)** $5:1$ **B)** $1:5$ **C)** $2:3$ **D)** $3:2$

**4.** In an equilateral triangle $PQR$, let the vertex $P$ be at $(3,5)$ and the side $QR$ be along the line $x+y=4$. If the orthocentre of the triangle $PQR$ is $(\alpha,\beta)$, then $9(\alpha+\beta)$ is equal to:

**A)** $16$ **B)** $27$ **C)** $36$ **D)** $48$

**5.** If a straight line drawn through the point of intersection of the lines $4x+3y-1=0$ and $3x+4y-1=0$, meets the co-ordinate axes at the points P and Q, then the locus of the mid point of PQ is:

**A)** $x+y-7=0$ **B)** $x+y-14xy=0$ **C)** $2x+y+14xy=0$ **D)** $x+2y-14xy=0$

**6.** Let ABC be an equilateral triangle with orthocenter at the origin and the side BC on the line $x+2\sqrt{2}y=4$. If the co-ordinates of the vertex A are $(\alpha,\beta)$, then the greatest integer less than or equal to $|\alpha+\sqrt{2}\beta|$ is

**A)** 2 **B)** 3 **C)** 5 **D)** 4

**7.** Let $A(1,0)$, $B(2,-1)$ and $C(\frac{7}{3},\frac{4}{3})$ be three points. If the equation of the bisector of the angle ABC is $\alpha x+\beta y=5$, then the value of $\alpha^2+\beta^2$ is

**A)** 8 **B)** 5 **C)** 13 **D)** 10

**8.** Let the angles made with the positive x-axis by two straight lines drawn from the point $P(2,3)$ and meeting the line $x+y=6$ at a distance $\sqrt{\frac{2}{3}}$ from the point P be $\theta_1$ and $\theta_2$. Then the value of $(\theta_1+\theta_2)$ is:

**A)** $\frac{\pi}{12}$ **B)** $\frac{\pi}{6}$ **C)** $\frac{\pi}{2}$ **D)** $\frac{\pi}{3}$

**9.** Let $A(1,2)$ and $C(-3,-6)$ be two diagonally opposite vertices of a rhombus, whose sides AD and BC are parallel to the line $7x-y=14$. If $B(\alpha,\beta)$ and $D(\gamma,\delta)$ are the other two vertices, then $|\alpha+\beta+\gamma+\delta|$ is equal to:

**A)** 9 **B)** 3 **C)** 6 **D)** 1

10. A rectangle is formed by the lines $x=0, x=3, y=0$ and $y=4$. Let the line L be perpendicular to $3x+y+6=0$ and divide the area of the rectangle into two equal parts. Then the distance of the point $\left(\frac{1}{2},-5\right)$ from the line L is equal to:

A) $2\sqrt{5}$ B) $3\sqrt{10}$ C) $\sqrt{10}$ D) $2\sqrt{10}$

11. Let a point A lie between the parallel lines $L_1$ and $L_2$ such that its distances from $L_1$ and $L_2$ are 6 and 3 units, respectively. Then the area (in sq. units) of the equilateral triangle ABC, where the points B and C lie on the lines $L_1$ and $L_2$ respectively, is:

A) $15\sqrt{6}$ B) 27 C) $21\sqrt{3}$ D) $12\sqrt{2}$

12. A line passing through the point $\mathrm{P}(\mathrm{a}, 0)$ makes an acute angle $\alpha$ with the positive x -axis. Let this line be rotated about the point $P$ through an angle $\frac{\alpha}{2}$ in the clock-wise direction. If in the new position, the slope of the line is $2-\sqrt{3}$ and its distance from the origin is $\frac{1}{\sqrt{2}}$, then the value of $3a^2\tan^2\alpha-2\sqrt{3}$ is

A) 4 B) 6 C) 5 D) 8

13. Let the three sides of a triangle are on the lines $4x-7y+10=0, x+y=5$ and $7x+4y=15$. Then the distance of its orthocentre from the orthocentre of the triangle formed by the lines $x=0, y=0$ and $x+y=1$ is

A) 5 B) $\sqrt{5}$ C) $\sqrt{20}$ D) 20

14. Let a be the length of a side of a square OABC with $O$ being the origin. Its side OA makes an acute angle $\alpha$ with the positive $x$-axis and the equations of its diagonals are $(\sqrt{3}+1)x+(\sqrt{3}-1)y=0$ and $(\sqrt{3}-1)x-(\sqrt{3}+1)y+8\sqrt{3}=0$. Then $\mathrm{a}^2$ is equal to

A) 48 B) 32 C) 16 D) 24

15. If the orthocentre of the triangle formed by the lines $y=x+1, y=4x-8$ and $y=mx+c$ is at $(3,-1)$, then $\mathrm{m}-\mathrm{c}$ is :

A) 0 B) -2 C) 4 D) 2

16. Let ABC be the triangle such that the equations of lines $AB$ and $AC$ be $3y-x=2$ and $x+y=2$, respectively, and the points B and C lie on x -axis. If $P$ is the orthocentre of the triangle $ABC$, then the area of the triangle PBC is equal to

A) 4 B) 10 C) 8 D) 6

17. Let A and B be two distinct points on the line $\mathrm{L}: \frac{\mathrm{x}-6}{3}=\frac{\mathrm{y}-7}{2}=\frac{\mathrm{z}-7}{-2}$. Both A and B are at a distance $2\sqrt{17}$ from the foot of perpendicular drawn from the point $(1,2,3)$ on the line L . If O is the origin, then $\overrightarrow{OA}\cdot\overrightarrow{OB}$ is equal to:

A) 49 B) 47 C) 21 D) 62

18. Let $ABCD$ be a tetrahedron such that the edges $\mathrm{AB}, \mathrm{AC}$ and AD are mutually perpendicular. Let the areas of the triangles $\mathrm{ABC}, \mathrm{ACD}$ and ADB be 5,6 and 7 square units respectively. Then the area (in square units) of the $\triangle\mathrm{BCD}$ is equal to :

A) $\sqrt{340}$ B) 12 C) $\sqrt{110}$ D) $7\sqrt{3}$

19. Let the line $x+y=1$ meet the axes of $x$ and $y$ at A and B, respectively. A right angled triangle AMN is inscribed in the triangle OAB , where O is the origin and the points M and N lie on the lines $OB$ and $AB$, respectively. If the area of the triangle $AMN$ is $\frac{4}{9}$ of the area of the triangle $OAB$ and AN : NB $=\lambda:1$, then the sum of all possible value(s) of is $\lambda$ :

A) 2 B) $\frac{5}{2}$ C) $\frac{1}{2}$ D) $\frac{13}{6}$

20. Let $ABC$ be a triangle formed by the lines $7x-6y+3=0, x+2y-31=0$ and $9x-2y-19=0$. Let the point $(h,k)$ be the image of the centroid of $\Delta ABC$ in the line $3x+6y-53=0$. Then $h^2+k^2+hk$ is equal to:

A) 47 B) 37 C) 36 D) 40

21. Let ${}^{n}C_{r-1}=28, {}^{n}C_{r}=56$ and ${}^{n}C_{r+1}=70$. Let $A(4\cos t, 4\sin t), B(2\sin t, -2\cos t)$ and $C\left(3r-n, r^{2}-n-1\right)$ be the vertices of a triangle $ABC$, where $t$ is a parameter. If $(3x-1)^{2}+(3y)^{2}=\alpha$, is the locus of the centroid of triangle ABC , then $\alpha$ equals

A) 6 B) 18 C) 8 D) 20

22. Let the points $\left(\frac{11}{2}, \alpha\right)$ lie on or inside the triangle with sides $x+y=11, x+2y=16$ and $2x+3y=29$. Then the product of the smallest and the largest values of $\alpha$ is equal to :

A) 44 B) 22 C) 33 D) 55

23. A rod of length eight units moves such that its ends $A$ and $B$ always lie on the lines $x-y+2=0$ and $y+2=0$, respectively. If the locus of the point $P$, that divides the rod $AB$ internally in the ratio $2:1$ is $9\left(x^{2}+\alpha y^{2}+\beta xy+\gamma x+28y\right)-76=0$, then $\alpha-\beta-\gamma$ is equal to :

A) 22 B) 21 C) 23 D) 24

24. Let the area of a $\triangle PQR$ with vertices $P(5,4), Q(-2,4)$ and $R(a,b)$ be 35 square units. If its orthocenter and centroid are $O\left(2, \frac{14}{5}\right)$ and $C(c,d)$ respectively, then $c+2d$ is equal to

A) $\frac{8}{3}$ B) $\frac{7}{3}$ C) $2$ D) $3$

25. Let the triangle PQR be the image of the triangle with vertices $(1,3),(3,1)$ and $(2,4)$ in the line $x+2y=2$. If the centroid of $\triangle \mathrm{PQR}$ is the point $(\alpha, \beta)$, then $15(\alpha-\beta)$ is equal to :

A) $19$ B) $24$ C) $21$ D) $22$

26. Consider the lines $\mathrm{x}(3\lambda+1)+\mathrm{y}(7\lambda+2)=17\lambda+5$, $\lambda$ being a parameter, all passing through a point P . One of these lines (say L) is farthest from the origin. If the distance of $L$ from the point $(3,6)$ is $d$, then the value of $d^{2}$ is

A) $20$ B) $30$ C) $10$ D) $15$

27. Let the lines $3x-4y-\alpha=0, 8x-11y-33=0$, and $2x-3y+\lambda=0$ be concurrent. If the image of the point $(1,2)$ in the line $2x-3y+\lambda=0$ is $\left(\frac{57}{13}, \frac{-40}{13}\right)$, then $|\alpha\lambda|$ is equal to

A) $84$ B) $113$ C) $91$ D) $101$

28. Let the equation $\mathrm{x}(\mathrm{x}+2)(12-\mathrm{k})=2$ have equal roots. Then the distance of the point $\left(\mathrm{k}, \frac{\mathrm{k}}{2}\right)$ from the line $3x+4y+5=0$ is

A) $15$ B) $5\sqrt{3}$ C) $15\sqrt{5}$ D) $12$

29. Let the range of the function $f(x)=6+16\cos x\cdot\cos\left(\frac{\pi}{3}-x\right)\cdot\cos\left(\frac{\pi}{3}+x\right)\cdot\sin 3x\cdot\cos 6x, x\in\mathbf{R}$ be $[\alpha, \beta]$. Then the distance of the point $(\alpha, \beta)$ from the line $3x+4y+12=0$ is :

A) 11 B) 8 C) 10 D) 9

30. If for $\theta\in\left[-\frac{\pi}{3}, 0\right]$, the points $(x,y)=\left(3\tan\left(\theta+\frac{\pi}{3}\right), 2\tan\left(\theta+\frac{\pi}{6}\right)\right)$ lie on $xy+\alpha x+\beta y+\gamma=0$, then $\alpha^{2}+\beta^{2}+\gamma^{2}$ is equal to :

A) 80 B) 72 C) 96 D) 75

31. A line passes through the origin and makes equal angles with the positive coordinate axes. It intersects the lines
$\mathrm{L}_{1}: 2\mathrm{x}+\mathrm{y}+6=0$ and $\mathrm{L}_{2}: 4\mathrm{x}+2\mathrm{y}-\mathrm{p}=0, \mathrm{p}>0$, at the points $A$ and $B$, respectively. If $AB=\frac{9}{\sqrt{2}}$ and the foot of the perpendicular from the point A on the line $L_{2}$ is $M$, then $\frac{AM}{BM}$ is equal to

A) $5$ B) $4$ C) $2$ D) $3$

32. Two equal sides of an isosceles triangle are along $-x+2y=4$ and $x+y=4$. If m is the slope of its third side, then the sum, of all possible distinct values of $m$, is :

A) $-2\sqrt{10}$ B) $12$ C) $6$ D) $-6$

**33.** Let the area of the triangle formed by a straight Line L: $\mathrm{x}+\mathrm{by}+\mathrm{c}=0$ with co-ordinate axes be 48 square units. If the perpendicular drawn from the origin to the line L makes an angle of $45^{\circ}$ with the positive x - axis, then the value of $\mathrm{b}^2+\mathrm{c}^2$ is:

A) $90$ B) $93$ C) $97$ D) $83$

**34.** Two vertices of a triangle $\mathrm{ABC}$ are $\mathrm{A}(3,-1)$ and $\mathrm{B}(-2,3)$, and its orthocentre is $\mathrm{P}(1,1)$. If the coordinates of the point $\mathrm{C}$ are $(\alpha,\beta)$ and the centre of the circle circumscribing the triangle $\mathrm{PAB}$ is $(h,k)$, then the value of $(\alpha+\beta)+2(h+k)$ equals :

A) $51$ B) $81$ C) $5$ D) $15$

**35.** A variable line $\mathrm{L}$ passes through the point $(3,5)$ and intersects the positive coordinate axes at the points $\mathrm{A}$ and $\mathrm{B}$. The minimum area of the triangle $\mathrm{OAB}$, where $\mathrm{O}$ is the origin, is :

A) $30$ B) $25$ C) $40$ D) $35$

**36.** A ray of light coming from the point $P(1,2)$ gets reflected from the point $\mathrm{Q}$ on the $\mathrm{x}$-axis and then passes through the point $R(4,3)$. If the point $S(h,\mathrm{k})$ is such that $\mathrm{PQRS}$ is a parallelogram, then $\mathrm{hk}^2$ is equal to

A) $80$ B) $90$ C) $60$ D) $70$

**37.** If the line segment joining the points $(5,2)$ and $(2,a)$ subtends an angle $\frac{\pi}{4}$ at the origin, then the absolute value of the product of all possible values of $a$ is:

A) $6$ B) $8$ C) $2$ D) $4$

**38.** If the image of the point $(-4,5)$ in the line $x+2y=2$ lies on the circle $(x+4)^2+(y-3)^2=r^2$, then $r$ is equal lo:

A) $1$ B) $2$ C) $4$ D) $3$

**39.** The equations of two sides $\mathrm{AB}$ and $\mathrm{AC}$ of a triangle $\mathrm{ABC}$ are $4\mathrm{x}+\mathrm{y}=14$ and $3\mathrm{x}-2\mathrm{y}=5$, respectively. The point $\left(2,-\frac{4}{3}\right)$ divides the third side $\mathrm{BC}$ internally in the ratio $2:1$. The equation of the side $\mathrm{BC}$ is :

A) $x-6y-10=0$ B) $x-3y-6=0$ C) $x+3y+2=0$ D) $x+6y+6=0$

**40.** If the locus of the point, whose distances from the point $(2,1)$ and $(1,3)$ are in the ratio $5:4$, is $ax^2+by^2+cxy+dx+ey+170=0$, then the value of $\mathrm{a}^2+2\,\mathrm{b}+3\mathrm{c}+4\,\mathrm{d}+\mathrm{e}$ is equal to :

A) $5$ B) $-27$ C) $37$ D) $437$

**41.** A circle in inscribed in an equilateral triangle of side of length $12$. If the area and perimeter of any square inscribed in this circle are $\mathrm{m}$ and $\mathrm{n}$, respectively, then $m+n^2$ is equal to

A) $396$ B) $408$ C) $312$ D) $414$

**42.** Let a variable line of slope $m>0$ passing through the point $(4,-9)$ intersect the coordinate axes at the points $A$ and $B$. the minimum value of the sum of the distances of $\mathrm{A}$ and $\mathrm{B}$ from the origin is

A) $25$ B) $30$ C) $15$ D) $10$

**43.** Let two straight lines drawn from the origin $O$ intersect the line $3x+4y=12$ at the points $P$ and $\mathrm{Q}$ such that $\triangle\mathrm{OPQ}$ is an isosceles triangle and $\angle\mathrm{POQ}=90^{\circ}$. If $l=\mathrm{OP}^2+\mathrm{PQ}^2+\mathrm{QO}^2$, then the greatest integer less than or equal to $l$ is :

A) $44$ B) $48$ C) $46$ D) $42$

**44.** The equation of one of the straight lines which passes through the point $(1,3)$ and makes an angles $\tan^{-1}(\sqrt{2})$ with the straight line, $y+1=3\sqrt{2}x$ is

A) $4\sqrt{2}x+5y-(15+4\sqrt{2})=0$ B) $5\sqrt{2}x+4y-(15+4\sqrt{2})=0$

C) $4\sqrt{2}x+5y-4\sqrt{2}=0$ D) $4\sqrt{2}x-5y-(5+4\sqrt{2})=0$

**45.** Let ABC be a triangle with $A(-3,1)$ and $\angle ACB = \theta, 0 < \theta < \frac{\pi}{2}$. If the equation of the median through B is $2x + y - 3 = 0$ and the equation of angle bisector of C is $7x - 4y - 1 = 0$ then $\tan\theta$ is equal to:

**A)** $\frac{1}{2}$ **B)** $\frac{3}{4}$ **C)** $\frac{4}{3}$ **D)** $2$

**46.** Let A be a fixed point $(0,6)$ and B be a moving point $(2t,0)$. Let M be the mid-point of AB and the perpendicular bisector of AB meets the y-axis at C. The locus of the mid-point P of MC is :

**A)** $3x^2 - 2y - 6 = 0$ **B)** $3x^2 + 2y - 6 = 0$ **C)** $2x^2 + 3y - 9 = 0$ **D)** $2x^2 - 3y + 9 = 0$

**47.** The vertices of a triangle are $A(-1,3), B(-2,2)$ and $C(3,-1)$. $A$ new triangle is formed by shifting the sides of the triangle by one unit inwards. Then the equation of the side of the new triangle nearest to origin is :

**A)** $x - y - (2 + \sqrt{2}) = 0$ **B)** $-x + y - (2 - \sqrt{2}) = 0$

**C)** $x + y - (2 - \sqrt{2}) = 0$ **D)** $x + y + (2 - \sqrt{2}) = 0$

**48.** Let $A(a,b), B(3,4)$ and $(-6,-8)$ respectively denote the centroid, circumcentre and orthocentre of a triangle. Then, the distance of the point $P(2a+3, 7b+5)$ from the line $2x + 3y - 4 = 0$ measured parallel to the line $x - 2y - 1 = 0$ is

**A)** $\frac{15\sqrt{5}}{7}$ **B)** $\frac{17\sqrt{5}}{6}$ **C)** $\frac{17\sqrt{5}}{7}$ **D)** $\frac{\sqrt{5}}{17}$

**49.** Let $\alpha, \beta, \gamma, \delta \in Z$ and let $A(\alpha,\beta), B(1,0), C(\gamma,\delta)$ and $D(1,2)$ be the vertices of a parallelogram ABCD. If AB $= \sqrt{10}$ and the points A and C lie on the line $3y = 2x + 1$, then $2(\alpha + \beta + \gamma + \delta)$ is equal to

**A)** $10$ **B)** $5$ **C)** $12$ **D)** $8$

**50.** If $x^2 - y^2 + 2hxy + 2gx + 2fy + c = 0$ is the locus of a point, which moves such that it is always equidistant from the lines $x + 2y + 7 = 0$ and $2x - y + 8 = 0$, then the value of $g + c + h - f$ equals

**A)** $14$ **B)** $6$ **C)** $8$ **D)** $29$

**51.** A line passing through the point $A(9,0)$ makes an angle of $30^\circ$ with the positive direction of x-axis. If this line is rotated about $A$ through an angle of $15^\circ$ in the clockwise direction, then its equation in the new position is

**A)** $\frac{y}{\sqrt{3}-2} + x = 9$ **B)** $\frac{x}{\sqrt{3}-2} + y = 9$ **C)** $\frac{x}{\sqrt{3}+2} + y = 9$ **D)** $\frac{y}{\sqrt{3}+2} + x = 9$

**52.** Let $A$ be the point of intersection of the lines $3x + 2y = 14, 5x - y = 6$ and $B$ be the point of intersection of the lines $4x + 3y = 8, 6x + y = 5$ The distance of the point $P(5,-2)$ from the line AB is

**A)** $\frac{13}{2}$ **B)** $8$ **C)** $\frac{5}{2}$ **D)** $6$

**53.** The distance of the point $(2,3)$ from the line $2x - 3y + 28 = 0$, measured parallel to the line $\sqrt{3}x - y + 1 = 0$, is equal to

**A)** $4\sqrt{2}$ **B)** $6\sqrt{3}$ **C)** $3 + 4\sqrt{2}$ **D)** $4 + 6\sqrt{3}$

**54.** In a $\triangle ABC$, suppose $y = x$ is the equation of the bisector of the angle $B$ and the equation of the side $AC$ is $2x - y = 2$. If $2AB = BC$ and the point $A$ and $B$ are respectively $(4,6)$ and $(\alpha,\beta)$, then $\alpha + 2\beta$ is equal to

**A)** $42$ **B)** $39$ **C)** $48$ **D)** $45$

**55.** The portion of the line $4x + 5y = 20$ in the first quadrant is trisected by the lines $L_1$ and $L_2$ passing through the origin. The tangent of an angle between the lines $L_1$ and $L_2$ is:

**A)** $\frac{8}{5}$ **B)** $\frac{25}{41}$ **C)** $\frac{2}{5}$ **D)** $\frac{30}{41}$

**56.** The equations of the sides $AB, BC \& CA$ of a triangle $ABC$ are $2x + y = 0, x + py = 21a (a \neq 0)$ and $x - y = 3$ respectively. Let $P(2,a)$ be the centroid of the triangle $ABC$, then $(BC)^2$ is equal to

**A)** 121 **B)** 122 **C)** 123 **D)** 124

**57.** Let a rectangle $ABCD$ of sides $2$ and $4$ be inscribed in another rectangle $PQRS$ such that the vertices of the rectangle $ABCD$ lie on the sides of the rectangle $PQRS$. Let $a$ and $b$ be the sides of the rectangle $PQRS$ when its area is maximum. Then $(a+b)^2$ is equal to :

**A)** $72$ **B)** $60$ **C)** $80$ **D)** $64$

**58.** If the line, $2x-y+3=0$ is at a distance $\frac{1}{\sqrt{5}}$ and $\frac{2}{\sqrt{5}}$ from the lines $4x-2y+\alpha=0$ and $6x-3y+\beta=0$, respectively, then the sum of all possible values of $\alpha$ and $\beta$ is

**A)** $12$ **B)** $30$ **C)** $18$ **D)** $60$

## Maths - Section B ( Numeric )

**59.** From the point $(-1,-1)$, two rays are sent making angles of $45°$ with the line $x+y=0$. These rays get reflected from the mirror $x+2y=1$. If the equations of the reflected rays are $ax+by=9$ and $cx+dy=7$, $a,b,c,d\in \mathbf{Z}$, then the value of $ad+bc$ is ______.

**60.** If P is a point on the circle $x^2+y^2=4$, Q is a point on the straight line $5x+y+2=0$ and $x-y+1=0$ is the perpendicular bisector of PQ, then 13 times the sum of abscissa of all such point P is .......... .

**61.** Let $\mathrm{A}(4,-2), \mathrm{B}(1,1)$ and $\mathrm{C}(9,-3)$ be the vertices of a triangle $ABC$. Then the maximum area of the parallelogram AFDE , formed with vertices $\mathrm{D}, \mathrm{E}$ and F on the sides $\mathrm{BC}, \mathrm{CA}$ and AB of the triangle ABC respectively, is _____ .

**62.** Let a ray of light passing through the point $(3,10)$ reflects on the line $2x+y=6$ and the reflected ray passes through the point $(7,2)$. If the equation of the incident ray is $ax+$ by $+1=0$, then $a^2+b^2+3ab$ is equal to ..........

**63.** Consider a triangle $\mathrm{ABC}$ having the vertices $\mathrm{A}(1,2), \mathrm{B}(\alpha,\beta)$ and $\mathrm{C}(\gamma,\delta)$ and angles $\angle\mathrm{ABC}=\frac{\pi}{6}$ and $\angle\mathrm{BAC}=\frac{2\pi}{3}$. If the points $\mathrm{B}$ and $\mathrm{C}$ lie on the line $\mathrm{y}=\mathrm{x}+4$, then $\alpha^2+\gamma^2$ is equal to ...................

**64.** Let $ABC$ be an isosceles triangle in which $A$ is at $(-1,0), \angle A=\frac{2\pi}{3}$, $AB=AC$ and $B$ is on the positive $\mathrm{x}$-axis. If $\mathrm{BC}=4\sqrt{3}$ and the line $\mathrm{BC}$ intersects the line $y=x+3$ at $(\alpha,\beta)$, then $\frac{\beta^4}{\alpha^2}$ is :

**65.** Let $\mathrm{A}(-2,-1), \mathrm{B}(1,0), \mathrm{C}(\alpha,\beta)$ and $\mathrm{D}(\gamma,\delta)$ be the vertices of a parallelogram $ABCD$. If the point $C$ lies on $2x-y=5$ and the point $D$ lies on $3x-2y=6$, then the value of $|\alpha+\beta+\gamma+\delta|$ is equal to ..........

# Straight Lines

Subjects : Maths

Previous Year Questions

## Maths - Section A ( MCQ )

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 - C | 2 - C | 3 - A | 4 - D | 5 - B | 6 - D | 7 - D | 8 - C | 9 - C | 10 - D |
| 11 - C | 12 - A | 13 - B | 14 - A | 15 - A | 16 - D | 17 - B | 18 - C | 19 - A | 20 - B |
| 21 - D | 22 - C | 23 - C | 24 - D | 25 - D | 26 - A | 27 - C | 28 - A | 29 - A | 30 - D |
| 31 - D | 32 - C | 33 - C | 34 - C | 35 - A | 36 - D | 37 - D | 38 - B | 39 - C | 40 - C |
| 41 - B | 42 - A | 43 - C | 44 - A | 45 - C | 46 - C | 47 - C | 48 - C | 49 - D | 50 - A |
| 51 - A | 52 - D | 53 - D | 54 - A | 55 - D | 56 - B | 57 - A | 58 - B | | |

## Maths - Section B ( Numeric )

| | | | | | | |
|---|---|---|---|---|---|---|
| 59 - 7 | 60 - 2 | 61 - 3 | 62 - 1 | 63 - 14 | 64 - 36 | 65 - 32 |