MATHS

BOOKS - MTG WBJEE MATHS (HINGLISH)

STRAIGHT LINES

Wb Jee Workout

1. The points $\left(0, \frac{8}{3}\right)$, $(1, 3)$ and $(82, 30)$ are vertices of

A. an obtuse angled triangle

B. an acute angled triangle

C. a right angled triangle

D. None of these

Answer: D

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2. $\begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix} = \begin{vmatrix} a_1 & b_1 & 1 \\ a_2 & b_2 & 1 \\ a_3 & b_3 & 1 \end{vmatrix}$ then the two triangles with vertices $(x_1, y_1), (x_2, y_2), (x_3, y_3)$ and $(a_1, b_1), (a_2, b_2), (a_3, b_3)$ are

A. equal in area

B. similar

C. congruent

D. None of these

Answer: A

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3. Orthocentre of the triangle whose vertices are (1, 1) (3, 5) and (3, 0), is

A. $(-1, 1)$

B. $(1, -1)$

C. (1, 1)

D. None of these

Answer: C

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4. Incentre of the triangle whose vertices are (6, 0), (0, 6) and (7, 7), is

A. $\left(\frac{9}{2}, \frac{9}{2}\right)$

B. $\left(\frac{7}{2}, \frac{7}{2}\right)$

C. $\left(\frac{11}{2}, \frac{11}{2}\right)$

D. none of these

Answer: A

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5. Ratio in which the join of (2, 1) and $(-1, 2)$ is divided by the line $x + 3y + 5 = 0$ is

A. $1:2$ internally

B. $1:3$ externally

C. $2:1$ externally

D. None of these

Answer: D

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6. If coordinates of the vertices A, B, C of a triangle ABC are (6, 0), (0, 6) and (7, 7) respectively, then centre of the circle touching AB externally and BC and CA produced is

A. $(-3, -3)$

B. $(-4, -4)$

C. $(-2, -2)$

D. None of these

Answer: A

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7. If coordinates of the mid-points of the sides of a triangle are $(1, -1)$, (2, 3) and (3, 2), then area of the trangle is

A. 5 sq. units

B. 6 sq. units

C. $\frac{11}{2}$ sq. units

D. None of these

Answer: D

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8. Circumcentre of the triangle whose vertices are $(2, -1)$, (3, 2) and (0, 3) is

A. $(1, -1)$

B. $(-1, 1)$

C. (1, 1)

D. None of these

Answer: C

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9. Locus of all such points which is equidistant from (1, 2) and x-axis is

A. $x^2 - 2x - 4y + 5 = 0$

B. $x^2 + 2x - 4y + 5 = 0$

C. $x^2 - 2x + 4y + 5 = 0$

D. None of these

Answer: A

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10. A line passing through (2, 2) and perpendicular to the line $3x + y = 3$. Its x intercept is given by

A. 43924

B. $-4/3$

C. -4

D. 4

Answer: C

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11. The co-ordinates of incentre of the triangle whose vertices are given by $A(x_1, y_1), B(x_2, y_2), C(x_3, y_3)$

is

A. $\frac{ax_1 + bx_2 - cx_3}{a + b - c}, \frac{ay_1 + by_2 - cy_3}{a + b - c}$

B. $\frac{ax_1 + bx_2 + cx_3}{a - b + c}, \frac{ay_1 - by_2 + cy_3}{a - b + c}$

C. $\frac{-ax_1 + bx_2 + cx_3}{-a + b + c}, \frac{-ay_1 + by_2 + cy_3}{-a + b + c}$

D. None of these

Answer: D

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12. Let O be the origin and A, B be the two points having coordinates (0, 4) and (6, 0) respectively. If a point P moves in such a way that the area of the

ΔOPA is always twice the area of ΔPOB, then P lies on

A. $y^2 = 9x^2$

B. $x^2 = -9y^2$

C. $x^2 - 9y^2 = 0$

D. None of these

Answer: C

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13. The straight lines $x + y = 0, 3x + y - 4 = 0$ and $x + 3y - 4 = 0$

form a triangle which is (A) isosceles (B) right angled (C) equilateral (D) scalene

A. isosceles

B. equilateral

C. right angled

D. None of these

Answer: A

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14. If the lines $x - y + 1 = 0, 2x + 3y + 2 = 0$ and $ax + by - 2 = 0$

are concurrent, then $5x + 10 = 0$ passes through the point

A. (a, b)

B. (b, a)

C. (0, b)

D. (a, 0)

Answer: D

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15. The locus of a point P which divides the line joining (1, 0) and $(2\cos\theta, 2\sin\theta)$ internally in the

ratio $2:3$ for all θ, is a

A. straight line

B. circle

C. pair of straight line

D. parabola

Answer: B

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16. The area of a triangle is 5 units. Two of its certices are $(2, 1)$ and $(3, -2)$. The third vertex lies on y = x

+ 3. Find the co-ordinates of the third vertex of the triangle.

A. $\left(-\frac{7}{2}, -\frac{13}{2}\right)$

B. $\left(\frac{7}{2}, \frac{13}{2}\right)$

C. $\left(-\frac{7}{2}, \frac{13}{2}\right)$

D. $\left(\frac{7}{2}, -\frac{13}{2}\right)$

Answer: B

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17. Points A (1, 3) and C (5, 1) are opposite vertices of a rectangle ABCD. If the slope of BD is 2, then its

equation is

A. $2x - y = 4$

B. $2x + y = 4$

C. $2x + y - 7 = 0$

D. $2x + y + 7 = 0$

Answer: A

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18. The equation of straight line which passes through the point (-4,3) such that the portion of the

line between the axes is divided by the point in ratio 5:3 is -

A. $9x - 20y - 96 = 0$

B. $9x + 20y + 96 = 0$

C. $9x - 20y + 96 = 0$

D. $9x - 20y + 48 = 0$

Answer: C

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19. Equation of pair of lines passing through (2, 1) and perpendicular to the lines $16x^2 + 17xy + 12y^2 = 0$

is

A. $12x^2 - 17xy + 6y^2 - 31x - 22y + 64 = 0$

B. $12x^2 - 17xy + 6y^2 + 31x + 22y - 104 = 0$

C. $12x^2 - 17xy + 6y^2 - 31x + 22y + 20 = 0$

D. None of these

Answer: C

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20. Angle between the pair of straight lines $x^2 - xy - 6y^2 - 2x + 11y - 3 = 0$ is

A. $45^\circ, 135^\circ$

B. $\tan^{-1} 2, \pi - \tan^{-1} 2$

C. $\tan^{-1} 3, \pi - \tan^{-1} 3$

D. None of these

Answer: A

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21. The value of k for which

$2x^2 + 5xy + 3y^2 + 3x + 4y + k = 0$

represent pair of straight lines is

A. 0

B. -1

C. 1

D. None of these

Answer: C

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22. One possible condition for the three points (a, b), (b, a) and $\left(a^2, -b^2\right)$ to be collinear is

A. $a - b = 2$

B. $a + b = 2$

C. $a = 1 + b$

D. $a = 1 - b$

Answer: C

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23. The coordinates of the foot of the perpendicular from (a,0) on the line $y = mx + \frac{a}{m}$ are

A. $\left(0, \frac{a}{m}\right)$

B. $\left(0, -\frac{a}{m}\right)$

C. $\left(\frac{a}{m}, 0\right)$

D. $\left(-\frac{a}{m}, 0\right)$

Answer: A

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24. A line through the point A(2,0) which makes an angle of 30° with the positive direction of X-axis is rotated about A in clockwise direction through an angle of 15° . Then, the equation of the striaght line in the new position is

A. $\left(2-\sqrt{3}\right)x+y-4+2\sqrt{3}=0$

B. $\left(2-\sqrt{3}\right)x-y-4+2\sqrt{3}=0$

C. $\left(2-\sqrt{3}\right)x-y+4+2\sqrt{3}=0$

D. $\left(2-\sqrt{3}\right)x+y+4+2\sqrt{3}=0$

Answer: B

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25. The number of points on the line$x+y=4$ which are unit distance apart from the line $2x+2y=5$is :

A. 0

B. 1

C. 2

D. infinity

Answer: A

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26. In a plane sum of distances of a point with two mutually perpendicular fixed line is one then locus of the point is - 1. square 2. cirlce 3. two intersecting lines 4. straight line

A. parabola

B. circle

C. ellipse

D. straight line

Answer: D

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27. The equation of the lines through ((1,1) and making angles of 45° with the line x+y=0 are

A. $x-1=0, x-y=0$

B. $x-y=0, y-1=0$

C. $x+y-2=0, y-1-0$

D. $x-1-0, y-1=0$

Answer: D

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28. The points on $x + y = 4$ that lie at a unit distance from the line $4x + 3y - 10 =$ are

A. $(-3, 1), (7, 11)$

B. $(3, 1), (-7, 11)$

C. $(3, 1), (7, 11)$

D. $(5, 3), (-1, 2)$

Answer: B

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29. The equation of the locus of the point of intersection of the straight lines $x \sin\theta + (1 - \cos\theta)y = a \sin\theta$ and $x \sin\theta - (1 - \cos\theta)y + a \sin\theta = 0$ is

A. $y = \pm ax$

B. $x = \pm ay$

C. $y^2 = 4ax$

D. $x^2 + y^2 = a^2$

Answer: D

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30. Let PS be the median of the triangle with vertices $P(2, 2), Q(6, -1) and R(7, 3)$. The equation of the line passing through $(1, -1)$ and parallel to PS is (1) $4x - 7y - 11 = 0$ (2) $2x + 9y + 7 = 0$ (3) $4x + 7y + 3 = 0$ (4) $2x - 9y - 11 = 0$

A. $2x - 9y - 7 = 0$

B. $2x - 9y - 11 = 0$

C. $2x + 9y - 11 = 0$

D. $2x + 9y + 7 = 0$

Answer: D

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31. Show that four points $(0, -1), (6, 7), (-2, 3) and (8, 3)$ are the vertices of a rectangle. Also, find its area.

A. collinear

B. vertices of a parallelogram which not a rectangle

C. vertices of a rectangle which is not a square

D. None of these

Answer: C

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32. The area bounded by the line $x = 1$ and the curve $\sqrt{\frac{y}{x}} + \sqrt{\frac{x}{y}} = 4$ is

A. $4\sqrt{3}$

B. $2\sqrt{3}$

C. $8\sqrt{3}$

D. 4

Answer: A

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33. If A(Cosα , Sinα), B(Sinα,-Cosα), C(1,2) are the verties of a ΔABC, then as α varies, the locus of its centroid is:

A. $x^2 + y^2 - 2x - 4y + 1 = 0$

B. $3\left(x^2 + y^2\right) - 2x - 4y + 1 = 0$

C. $x^2 + y^2 - 2x - 4y + 3 = 0$

D. None of these

Answer: B

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34. If A and B are two fixed points, then the locus of a point which moves in such a way that the angle APB is a right angle is

A. a circle

B. an ellipse

C. a parabola

D. None of these

Answer: A

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35. Coordinates of the points A, B, C,D are (13,7), $(-5, 2), (7, 3)$ and $(3, 7)$ respectively. Let AB and CD meet at P, then PA:PB is equal to

A. $6:7$

B. $6:7$

C. $7:6$

D. None of these

Answer: D

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36. If coordinates of the vertices of a triangle are (2,0), (6,0) and (1,5), then distance between its orthocentre and circumcentre is

A. 4

B. 6

C. 5

D. None of these

Answer: C

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37. If $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ represents two parallel straight lines, then

A. $h(2) = ab$

B. $bg^2 = af$

C. $\frac{a}{h} = \frac{h}{b} = \frac{g}{f}$

D. All of these

Answer: D

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38. Given a family of lines a(2x +y+4) + b(x-2y-3)=0 .The number of lines belonging to the family at a distance of $\sqrt{10}$ from point $(2, -3)$ is

A. 3

B. 2

C. 1

D. None of these

Answer: C

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39. If the slopes of the lines $3x^2 + 2hxy + 4y^2 = 0$ are in the ration $3:1$, then h equals

A. $1/4$

B. -4

C. 0

D. $-1/4$

Answer: B

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40. Area (in sq. units) of the triangle formed by the lines $x^2 + 4xy + y^2 = 0$ and $x + y = 1$ is

A. $\sqrt{3}$

B. 2

C. 1

D. $\frac{\sqrt{3}}{2}$

Answer: D

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41. A ray of light through B(3,2) is reflected at the point $A(0, \beta)$ on the y-axis and passes through C(4,3). Then β is

A. $\frac{7}{11}$

B. $\frac{13}{7}$

C. $\frac{17}{7}$

D. $\frac{8}{11}$

Answer: C

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42. If the axes are rotated through an angle of 30° in the clockwise direction, the point $\left(4, -2\sqrt{3}\right)$ in the new system was formerly

A. $\left(2, \sqrt{3}\right)$

B. $\left(\sqrt{3}, -5\right)$

C. $\left(\sqrt{3}, 2\right)$

D. $(2, 3)$

Answer: B

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43. Number of points lying on the line $7x + 4y + 2 = 0$ which is equidistant from the lines $15x^2 + 56xy + 48y^2 = 0$ is

A. 2

B. 0

C. 1

D. None of these

Answer: A

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44. A variable straight line passes through the points of intersection of the lines $x + 2y = 1$ and $2x - y = 1$ and meets the co-ordinates axes in A and B. Prove that the locus of the midpoint Of AB is $10xy = x + 3y$.

A. $x - 3y = 10xy$

B. $x + 3y = 10xy$

C. $3x + y = 10xy$

D. None of these

Answer: B

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45. The pair of lines joining origin to the points of intersection of, the two curves $ax^2 + 2hxy + by^2 + 2gx = 0$ and $a'x^2 + 2h'xy + b'y^2 + 2g'x = 0$ will be at right angles, if

A. $g'(a + b) = g(a' + b')$

B. $g'(a' + b') = g(a + b)$

C. $g'(a - b) = g(a' - b')$

D. None of these

Answer: A

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46. A straight line L is perpendicular to the line $5x - y = 1$. The area of the triangle formed by the line L and the coordinate axes is $5 squareunits$. Find the equation of the line L.

A. $x + 5y + 5 = 0$

B. $x + 5y - 5\sqrt{2} = 0$

C. $x + 5y + \sqrt{5} = 0$

D. $x + 5y + 5\sqrt{2} = 0$

Answer: B::D

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47. Line L has intercepts a and b on the coordinate axes. When, the axes area rotated through a given angle, keeping the origin fixed, the same line L has intercepts p and q, then

A. $a^2 + b^2 = p^2 + q^2$

B. $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2} + \frac{1}{q^2}$

C. $a^2 + p^2 = b^2 + q^2$

D. $\frac{1}{a^2} + \frac{1}{p^2} = \frac{1}{b^2} + \frac{1}{q^2}$

Answer: B

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48. The co-ordinates of the third vertex of an equilateral triangle whose two vertices are at $(3, 4), (-2, 3)$ are

A. (1,7)

B. (5,1)

C. $\left(\frac{1+\sqrt{3}}{2}, \frac{7-5\sqrt{3}}{2}\right)$

D. $\left(\frac{1-\sqrt{3}}{2}, \frac{7+5\sqrt{3}}{2}\right)$

Answer: C::D

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49. Find the locus of the mid-point of the portion of the line $x\cos\alpha + y\sin\alpha = p$ which is intercepted between the axes.

A. $x^2 + y^2 = 4p^2$

B. $\frac{1}{x^2} + \frac{1}{y^2} = \frac{4}{p^2}$

C. $x^2 + y^2 = \frac{4}{p^2}$

D. $\frac{1}{x^2} + \frac{1}{y^2} = \frac{2}{p^2}$

Answer: B

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50. Distance between the pari of straight lines $x^2 + 6xy + 9y^2 + 4x + 12y - 5 = 0$ is given by

A. $6\sqrt{10}$

B. $\frac{6}{\sqrt{10}}$

C. $\frac{3\sqrt{10}}{2}$

D. None of these

Answer: B

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51. The area of the parallelogram whose sides are along the straight lines $y = 3x + 5, y = 3x + 2, y = 5x + 4$ and $y = 5x - 1$ is equals

A. $\frac{15}{2}$ sq. units

B. 15 sq. units

C. $\frac{15}{\sqrt{10}\sqrt{26}}$ sq units

D. None of these

Answer: A

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52. A pair of straight lines passing through origin and the point of intersection of the curve $x^2 + y^2 = 4$ and the line $x + y = a$, are at right angle then the value of 'a' is

A. 4

B. 2

C. -4

D. -2

Answer: B::D

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53. A (3, 4) and B(5, -2) are two points and P is a point such that $PA = PB$. If the area of triangle PAB is 10 square unit, what are the coordinates of P ?

A. (7,4)

B. (7,2)

C. (4,13)

D. (1,0)

Answer: B::D

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54. If the lines $y = x + 3$ and $y = 3x + 1$ are equally inclined to the line $y = mx + 4$ then the value of m is

A. $\frac{1 + 5\sqrt{2}}{2}$

B. $\frac{5\sqrt{2} - 1}{7}$

C. $\frac{1 - \sqrt{5}}{2}$

D. None of these

Answer: A::C

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55. Find the image of the point $(-8, 12)$ with respect to line mirror $4x + 7y + 13 = 0$.

A. $(16, -8)$

B. $(-2, -16)$

C. $(-16, -2)$

D. $(-8, -16)$

Answer: C

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Wb Jee Previous Years Questions

1. If $a, bandc$ are in $AP,$ then the straight line $ax + by + c = 0$ will always pass through a fixed point whose coordinates are_____

A. $(1, -1)$

B. $(-1, 1)$

C. $(1, -2)$

D. $(-2, 1)$

Answer: A

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2. The equation $2x^2 + 5xy - 12y^2 = 0$ respresents a

A. circle

B. pair of non-perpendicular intersecting straight lines

C. pair of perpendicular straight lines

D. hyperbola

Answer: B

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3. The number of lines which pass through the point $(2, -3)$ and are at a distance 8 from the point $(-1, 2)$ is

A. infinite

B. 4

C. 2

D. 0

Answer: D

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4. The straight lines $x + y = 0$, $5x + y = 4$ and $x + 5y = 4$ form (A) an isosceles triangle (B) an equilateral triangle (C) a scalene triangle (D) a right angled triangle

A. an isoscles triangle

B. an equilateral triangle

C. a scalene triangle

D. a right angled triangle

Answer: A

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5. If the point $(2\cos\theta, 2\sin\theta)$, for $\theta \in (0, 2\pi)$ lines in the region between the lines $x + y = 2$ and $x - y = 2$ containing the origin, then θ lies in

A. $\left(0, \frac{\pi}{2}\right) \cup \left(\frac{3\pi}{2}, 2\pi\right)$

B. $[0, \pi]$

C. $\left(\frac{\pi}{2}, \frac{3\pi}{2}\right)$

D. $\left[\frac{\pi}{4}, \frac{\pi}{2}\right]$

Answer: C

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6. Number of points having distance $\sqrt{5}$ from the straight line $x - 2y + 1 = 0$ and a distance $\sqrt{13}$ from the lines $2x + 3y - 1 = 0$ is

A. 1

B. 2

C. 4

D. 5

Answer: C

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7. The points $(-a, -b), (0, 0). (a, b)$ and $\left(a^2, a^3\right)$ are

A. collinear

B. vertices of a parallelogram

C. vertices of a rectangle

D. lie on a circle

Answer: A

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8. The line AB cuts off equal intercepts 2a from the axes. From any point P on the line AB perpendicular PR and PS are drawn on the axes. Locus of mid-point of RS is

A. $x - y = \frac{a}{2}$

B. $x + y = a$

C. $x^2 + y^2 = 4a^2$

D. $x^2 - y^2 = 2a^2$

Answer: B

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9. The line through the points (a, b) and $(-a, -b)$ passes through the point

A. (1,1)

B. $(3a, -2b)$

C. (a^2, ab)

D. $(-a, b)$

Answer: C

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10. Let S be the set of points whose abscissas and ordinates are natural numbers. Let $P \in S$ such that the sum of the distance of P from $(8, 0)$ and $(0, 12)$ is minimum among all elements in S. Then the number of such points P in S is

A. 1

B. 3

C. 5

D. 11

Answer: B

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11. $x + 8y - 22 = 0$, $5x + 2y - 34 = 0$, $2x - 3y + 13 = 0$ are the three sides of a triangle.The area of the triangle is

A. 36 sq. units

B. 19sq. Units

C. 42 sq.units

D. 72sq. Units

Answer: B

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12. Transforming to parallel axes through a point (p, q), the equation $2(x^2) + 3xy + 4y^2 + x + 18y + 25 = 0$ becomes $2(x^2) + 3xy + 4y^2 = 1.$

A. $p = -2, q = 3$

B. $p = 2, q = -3$

C. $p = 3, q = -4$

D. $p = -4, q = 3$

Answer: B

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13. Let $A(2, -3)$ and $B(-2, 1)$ be the vertices of ΔABC. If the centroid of this triangle moves on the line $2x + 3y = 1$ then the locus of the vertex $C$is the line

A. $2x + 3y = 9$

B. $2x - 3y = 9$

C. $3x + 2y = 5$

D. $3x - 2y = 3$

Answer: A

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14. The point $P(3, 6)$ is first reflected on the line $y = X$ and then the image point Q is again reflected on the line $y = -X$ to get the image point Q'.Then the circumcentre of the $\Delta PQQ'$ is

A. (6,3)

B. $(6, -3)$

C. $(3, -6)$

D. (0,0)

Answer: D

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15. Let d_1 and d_2 be the lengths of the perpendiculars drawn from any point of the line $7x - 9y + 10 = 0$ upon the lines $3x + 4y = 5$ and $12x + 5y = 7$ respectively. Then

$(A) d_1 > d_2 (B) d_1 = d_2 (C) d_1 < d_2 (D) d_1 = 2d_2$

A. $d_1 > d_2$

B. $d_1 = d_2$

C. $d_1 < d_2$

D. $d_1 = 2d_2$

Answer: B

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16. The point Q is the image of the point P(1,5) about the line y=x and R is the image of the point Q about the line $y = -x$. The circumcentre of the ΔPQR is

A. (5,1)

B. $(-5, 1)$

C. $(1, -5)$

D. (0,0)

Answer: D

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17. The vertices of a triangle are $A(-1, -7), B(5, 1)$ and $C(1, 4)$. The equation of the bisector of the angle ABC

A. $x = 7y + 2$

B. $7y = x + 2$

C. $y = 7x + 2$

D. $7x = y + 2$

Answer: B

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18. The variable line drawn through the point $(1, 3)$ meets the x-axis at A and y-axis at B. If the rectangle OAPB is completed. Where "O" is the origin, then locus of "P" is

A. $(y - y_1)^2 = 4(x - x_1)$

B. $\frac{x_1}{x} + \frac{y_1}{y} = 1$

C. $x^2 + y^2 = x_1^2 + y_1^2$

D. $\frac{x^2}{2x_1^2} + \frac{y^2}{y_1^2} = 1$

Answer: B

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19. A straight line L through the point (3,-2) is inclined at an angle 60° to the line $\sqrt{3}x + y = 1$ If L also intersects the x-axis then the equation of L is

A. $y + x\sqrt{3} + 2 + 3\sqrt{3} = 0$

B. $y - x\sqrt{3} + 2 + 3\sqrt{3} = 0$

C. $y - x\sqrt{3} - 2 - 2\sqrt{3} = 0$

D. $y - x\sqrt{3} + 2 - 3\sqrt{3} = 0$

Answer: B

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20. A variable line passes through the fixed point (α, β). The locus of the foot of the perpendicular from the origin on the line is

A. $x^2 + y^2 - \alpha x - \beta y = 0$

B. $x^2 - y^2 + 2\alpha x + 2\beta y = 0$

C. $\alpha x + \beta y \pm \sqrt{(\alpha^2 + \beta^2)} = 0$

D. $\frac{x^2}{\alpha^2} + \frac{y^2}{\beta^2} = 1$

Answer: A

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21. If the point of intersection of the line $2ax + 4ay + c = 0$ and $7bx + 3by - d = 0$ lies in the 4^{th} quadrant and is equidistant from the two axes, where a,b,c and d are non-zero numbers, then ad:bc equals to

A. $2:3$

B. $2:1$

C. $1:1$

D. $3:2$

Answer: B

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22. The equation $x^3 - yx^2 + x - y = 0$ represents

A. a hyperbola and two straight lines

B. a straight line

C. a parabola and two straight lines

D. a straight line and a circle

Answer: B

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23. A $(-1, 0)$ and $B(2, 0)$ are two given points. A point M is moving in such a way thatthe angle B in the triangle AMB remains twice as large as the angle A. Show that the locus of the pointM is a hyperbola. Find the eccentricity of the hyperbola.

A. a straight line

B. a parabola

C. an ellipse

D. a hyperbola

Answer: D

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24. A line cuts the X-axis at A $(5, 0)$ and the Y-axis at $B(0, -3)$. A variable line PQ is drawn pependicular to AB cutting the X-axis at P and the Y-axis at A. If AQ and BP meet at R, then the locus of R is

A. $x^2 + y^2 - 5x + 3y = 0$

B. $x^2 + y^2 + 5x + 3y = 0$

C. $x^2 + y^2 5x - 3y = 0$

D. $x^2 + y^2 - 5x - 3y = 0$

Answer: A

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25. The polar coordinate of a point P is $\left(2, -\frac{\pi}{4}\right)$. The polar coordinate of the point Q, which is such that the line joining Pqbisected perpendicularly by the initial line, is

A. $\left(2, \frac{\pi}{4}\right)$

B. $\left(2, \frac{\pi}{6}\right)$

C. $\left(-2, \frac{\pi}{4}\right)$

D. $\left(-2, \frac{\pi}{6}\right)$

Answer: A

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26. The coordinates of a point on the line $x + y + 1 = 0$ which is at a distance $\frac{1}{5}$ unit from the line $3x + 4y + 2 = 0$ are

A. $(2, -3)$

B. $(-3, 2)$

C. $(0, -1)$

D. $(-1, 0)$

Answer: B::D

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27. The area of the triangle formed by the intersection of a line parallel to x-axis and passing through P(h,k), with the lines y=x and $x + y = 2$ is h^2. The locus of the point P is

A. $x = y - 1$

B. $x = -(y - 1)$

C. $x = 1 + y$

D. $x = -(1 + y)$

Answer: A::B

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28. Straight lines $x - y = 7$ and $x + 4y = 2$ intersect at B. Point A and C are so chosen on these two lines such that AB=AC. The equation of line AC passing through $(2, -7)$ is

A. $x - y - 9 = 0$

B. $23x + 7y + 3 = 0$

C. $2x - y - 11 = 0$

D. $7x - 6y - 56 = 0$

Answer: A::B

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