MATHS

BOOKS - RESONANCE DPP ENGLISH

STRAIGHT LINES

Others

1. Let the straight line $L: x - 2y = 8$, be rotated, through an angle $'\theta'$ (where $\tan\theta = \frac{1}{3}$), about the point $P(0, -4)$ in anticlockwise sence. After rotation the line becomes tangent to the circle

which lies in 4^{th} quadrant and also touches co-ordinate axes. Which of the following is/are correct

A. Radii of all the possible circles are the roots of the equation $r^2 - 8r + 8 = 0$

B. After rotation equation of new line is x– y – 4 = 0

C. Difference of the radii of the possible circles is $4\sqrt{2}$

D. Area of one of the possible circle is 8π $(3 + 2\sqrt{2})$ sq. units

Answer: null

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2. The centre of circle inscribed in a square formed by lines $x^2 - 8x + 12 = 0$ and $y^2 - 14y + 45 = 0$ is $(4, 7)$ $(7, 4)$ $(9, 4)$ $(4, 9)$

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3. If $(0, 1), (1, 1) and (1, 0)$ be the middle points of the sides of a triangle, its incentre is $\left(2 + \sqrt{2}, 2 + \sqrt{2}\right)$ (b) $\left[2 + \sqrt{2}, -\left(2 + \sqrt{2}\right)\right]$ $\left(2 - \sqrt{2}, 2 - \sqrt{2}\right)$ (d) $\left[2 - \sqrt{2}, \left(2 + \sqrt{2}\right)\right]$

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4. $BandC$ are fixed points having coordinates (3, 0) and $(-3, 0)$, respectively. If the vertical angle BAC is 90^0, then the locus of the centroid of ABC has equation. $x^2 + y^2 = 1$ (b) $x^2 + y^2 = 2$ $9\left(x^2 + y^2\right) = 1$ (d) $9\left(x^2 + y^2\right) = 4$

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5. The point $(11, 10)$ divides the line segment joining the points (5,-2) and (9,6) in the ratio:

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6. If the coordinates of the vertices of triangle ABC are (-1,6), (-3,-9), and (5,-8), respectively, then find the equation of the median through C.

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7. If $A\&B$ are the points $(-3, 4) and (2, 1)$, then the co-ordinates of the point $ConAB$ produced such that $AC = 2BC$ are: a. (2,4)b. (3,7)c. (7,-2)d. (1/2,5/2)`

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8. One end of a thin straight elastic string is fixed at $A(4, -1)$ and the other end B is at $(1, 2)$ in the unstretched condition. If the string is stretched to triple its length to the point C, then find the coordinates of this point.

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9. An equilateral triangle has each of its sides of length 6 cm. If $(x_1, y_1), (x_2, y_2)$ & (x_3, y_3) are the verticles, then the value of the determinant

$$\begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}^2$$ is equal to :

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10. If the lines $ax + 2y + 1 = 0, bx + 3y + 1 = 0 and cx + 4y + 1 = 0$ are concurrent, then a, b, c are a. A.P. b. G.P. c. H.P. d. none of these

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