



# MATHS

## **BOOKS - JEE MAINS PREVIOUS YEAR**

## **STRAIGHT LINES**

#### Others

# 1. Let

$$P=(\,-1,0), Q=(0,0) and R=ig(3,3\sqrt{3}ig)$$

be three points. The equation of the bisector



2. Let A(h, k), B(1, 1) and C(2, 1) be the vertices of a right angled triangle with AC as its hypotenuse. If the area of the triangle is 1, then the set of values which k can take is given by (1)  $\{1, 3\}$  (2)  $\{0, 2\}$  (3)  $\{-1, 3\}$  (4)  $\{-3, -2\}$ 



**3.** The perpendicular bisector of the line segment joining P (1, 4) and Q (k, 3) has y-intercept -4. Then a possible value of k is (1) 1 (2) 2 (3) -2 (4) -4

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**4.** The line L given by  $\frac{x}{5} + \frac{y}{b} = 1$  passes through the point (13, 32). The line K is parallel to L and has the equation  $\frac{x}{c} + \frac{y}{3} = 1$  Then the distance between L and K is (1)  $\sqrt{17}$  (2)

$$\frac{17}{\sqrt{15}}$$
 (3)  $\frac{23}{\sqrt{17}}$  (4)  $\frac{23}{\sqrt{15}}$ 

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5. If the line 2x + y = k passes through the point which divides the line segment joining the points (1, 1) and (2, 4) in the ratio 3 : 2, then k equals (1)  $\frac{29}{5}$  (2) 5 (3) 6 (4)  $\frac{11}{5}$ A.  $\frac{29}{5}$  C. 6

D. 
$$\frac{11}{5}$$

### Answer: null



**6.** A line is drawn through the point (1, 2) to meet the coordinate axes at P and Q such that it forms a triangle OPQ, where O is the origin. If the area of the triangle OPQ is least, then

the slope of the line PQ is (1)  $-\frac{1}{4}$  (2) -4 (3)  $-2(4) -\frac{1}{2}$ Watch Video Solution

7. The number of values of k, for which the system of equations (k+1)x + 8y = 4kkx + (k+3)y = 3k - 1 has no solution, is (1) 1 (2) 2 (3) 3 (4) infinite

A. infinte

C. 2

D. 3

#### Answer: null

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8. A ray of light along  $x + \sqrt{3}y = \sqrt{3}$  gets reflected upon reaching x-axis, the equation of the reflected rays is (1)  $\sqrt{3}y = x - \sqrt{3}$  (2)  $y = \sqrt{3}x - \sqrt{3}$  (3)  $\sqrt{3}y = x - 1$  (4)  $y = x + \sqrt{3}$ 



**9.** The x-coordinate of the incentre of the triangle that has the coordinates of mid points of its sides as (0, 1), (1, 1) and (1, 0) is (1)  $2 - \sqrt{2} (2) 1 + \sqrt{2} (3) 1 - \sqrt{2} (4) 2 + \sqrt{2}$ 

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10. 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

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11. Two sides of a rhombus are along the lines, x - y + 1 = 0 and 7x - y - 5 = 0. If its diagonals intersect at (-1, -2), then which one of the following is a vertex of this rhombus ?



