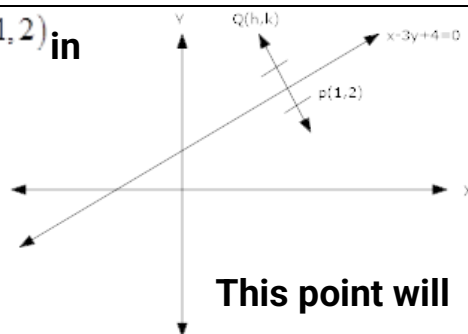


ANSWER KEY XI MATHS	
1	A
2	A
3	Slope of AB = slope of BC
4	-4/3
5	<p>Let $Q(h,k)$ is the image of the point $p(1,2)$ in the line.</p> <p>$x-3y+4=0$.....(i)</p> <p>Coordinate of midpoint of</p> $PQ = \left(\frac{h+1}{2}, \frac{k+2}{2} \right)$ <p>satisfy the eq.(i)</p> $\left(\frac{h+1}{2} \right) - 3 \left(\frac{k+2}{2} \right) + 4 = 0$ $h - 3k = -3$(i) <p>(Slope of line PQ) \times (slope of line $x-3y+4=0$) = -1</p> $\left(\frac{k-2}{h-1} \right) \left(\frac{-1}{3} \right) = -1$ $3h + k = 5$(ii) <p>On solving (i) and (ii)</p> $h = \frac{6}{5} \text{ and } k = \frac{7}{5}$
6	<p>The slopes of the given lines are $\frac{5}{12}$ and $\frac{3}{4}$</p> <p>Let m be the slope of a required line</p> <p>ATQ</p> $\left \frac{m - \frac{5}{12}}{1 + m \cdot \frac{5}{12}} \right = \left \frac{m - \frac{3}{4}}{1 + m \cdot \frac{3}{4}} \right $ $\Rightarrow \left \frac{12m - 5}{12 + 5m} \right = \left \frac{4m - 3}{4 + 3m} \right $ $\frac{12m - 5}{12 + 5m} = \frac{4m - 3}{4 + 3m}$ $16m^2 = -16$ $m^2 = -1$ <p>Neglect</p>



$$\frac{12m-5}{12+5m} = -\frac{4m-3}{4+3m}$$

$$m = \frac{4}{7}, \frac{-7}{4}$$

Req. eq. are

$$y-5 = \frac{4}{7}(x-4)$$

$$4x-7y+19=0$$

$$y-5 = \frac{-7}{4}(x-4)$$

$$7x+4y-48=0$$

7

Ans. $P(x_1, y_1)$ lies on $5x-y+4=0$

$$\Rightarrow 5x_1 - y_1 + 4 = 0$$

And $Q(x_2, y_2)$ lies on $3x+4y-4=0$

$$3x_2 + 4y_2 - 4 = 0$$

On solving

$$y_1 = 5x_1 + 4$$

$$y_2 = \frac{4-3x_2}{4}$$

Since R is the mid point of PQ

$$\frac{x_1+x_2}{2} = 1, \frac{y_1+y_2}{2} = 5$$

$$x_1+x_2 = 2, y_1+y_2 = 10$$

On solving

$$x_1 = \frac{26}{23}, x_2 = \frac{20}{23}$$

And $y_1 = \frac{222}{23}, y_2 = \frac{8}{23}$

Eq. of PQ

$$y - \frac{222}{23} = \frac{\frac{8}{23} - \frac{222}{23}}{\frac{20}{23} - \frac{26}{23}} \left(x - \frac{26}{23} \right)$$

$$107x - 3y - 92 = 0$$

