

Followings are of 2 Marks each (Q01-05).

- Q01. Find the value of k , for which the points $A(8, 1)$, $B(3, k)$ and $C(2, -5)$ are collinear.
- Q02. Convert the line $3x - 5y = 12$ into slope-intercept form. Also, write its slope.
- Q03. Find the equation of a line passing through the point $(-1, -6)$ and perpendicular to the line through the points $(2, 5)$ and $(-3, 6)$.
- Q04. Find the equation (s) of line (s) cutting off an intercept of '1' from the positive direction of y -axis and being equally inclined to the axes.
- Q05. Determine the distance between the lines $3x + 4y + 5 = 0$ and $6x + 8y - 1 = 0$. [2 × 5 = 10]

Followings are of 3 Marks each (Q06-07).

- Q06. Find the equation of that straight line which remains equidistant from the parallel lines $9x + 6y - 7 = 0$ and $3x + 2y + 6 = 0$.

OR

If the angle between two lines is $\frac{\pi}{4}$ and slope of one of the lines is $\frac{1}{2}$, then find the slope of the other line.

- Q07. Write the equation of the line which passes through the point $(3, 4)$ and whose intercept on y -axis is twice that on x -axis. [3 × 2 = 6]

Following is of 4 Marks (Q08).

- Q08. **PASSAGE BASED QUESTION :** Let a line $L : Ax + By + C = 0$ be given in its general form.

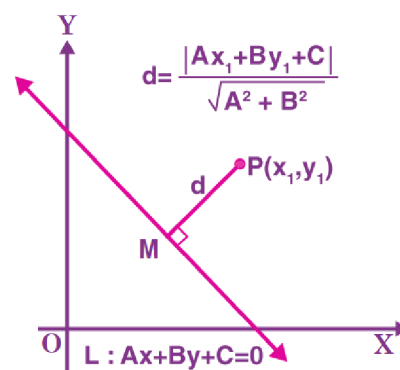
Then the perpendicular distance $PM = d$ (say) of a point $P(x_1, y_1)$ from the line $L : Ax + By + C = 0$ is given as

$$PM = d = \frac{|Ax_1 + By_1 + C|}{\sqrt{A^2 + B^2}} \text{ units.}$$

Based on the above information, answer the following questions.

- (a) If 'p' and 'q' represent the lengths of the perpendiculars drawn from the origin to the lines $L_1 : x \sec \theta - y \operatorname{cosec} \theta = m$ and $L_2 : x \cos \theta - y \sin \theta = m \cos 2\theta$ respectively, then find the value of the expression $[4p^2 + q^2]$.

- (b) Find the coordinates of the points on y -axis, which are at a distance of 4 units from the line $4x + 3y = 12$. [2 × 2 = 4]



Followings are of 5 Marks each (Q09-10).

- Q09. Find the image of a point $P(3, 8)$ with respect to the line $x + 3y = 7$, assuming the line to be a plane mirror.

OR

Find the equation of lines through A(3, 2) which make an angle of $\frac{\pi}{4}$ with the line $x - 2y = 3$.

- Q10. A line (l) is such that its segment between the lines $5x - y + 4 = 0$ and $3x + 4y - 4 = 0$ is bisected at the point (1, 5). Obtain the equation of line (l). [5 × 2 = 10]

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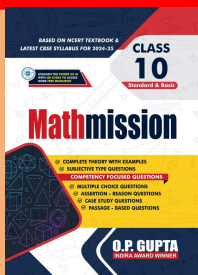
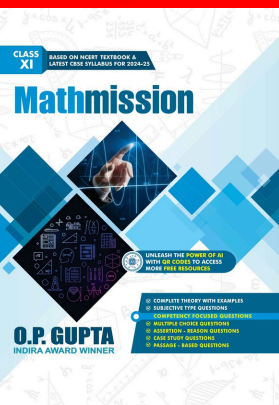
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