

» Co-ordinate Geometry Diagnostic Quiz

- Graph the following on separate axes.
 - $y = 3x - 5$
 - $4x + 3y - 4 = 0$
 - $\frac{x}{7} + 3y = 1$
 - $y = 2x^2 - 13x + 15$
- Find the equation of:
 - The line perpendicular to $y = 3x - 5$ passing through $(1, -2)$
 - The line parallel to $4x + 3y - 4 = 0$ passing through $(-5, 4)$
 - The line passing through $(2, 3)$ and the intersection of $\frac{x}{7} + 3y = 1$ and $y = 3x - 5$, using the k -method
- Find the angle (to the nearest degree) between:
 - $y = 3x - 5$ and the x -axis
 - $4x + 3y - 4 = 0$ and the x -axis
 - $\frac{x}{7} + 3y = 1$ and the y -axis
- Graph the following inequality regions, clearly labelling all borders and points of intersection:
 - $\{x, y \in \mathbb{R}: x \geq 3\} \cap \{x, y \in \mathbb{R}: y > x^2\}$
 - $\{x, y \in \mathbb{R}: y \leq x - 1\} \cup \{x, y \in \mathbb{R}: x^2 + y^2 < 16\}$
- Calculate the distance between $4x + 3y - 4 = 0$ and $(4, -3)$.
- For the following intervals: (i) divide them into the requested ratios, and (ii) graph them on separate number planes, clearly labelling the point that divides them:
 - AB internally into the ratio 1:3, given $A(1, 1)$ and $B(-5, 0)$
 - PQ externally into the ratio 5:2, given $P(-3, 2)$ and $Q(1, 4)$
- Given $B(4, 4)$ and $C(0, 1)$:
 - Verify that B lies on $x^2 = 4y$.
 - Find the equation of the line BC .
 - Find the other point D where this line cuts the parabola.
 - Show that the line m with equation $y = 2x - 4$ is tangent at B .
 - Find the point of intersection K of m with $y = -1$.
 - Find the equation of DK . Show that $DK \perp BK$. and that DK is a tangent to this parabola.