Co-ordinate Geometry Glossary

Term	Definition
Coordinate Geometry	The branch of geometry that deals with the properties and relationships of geometric figures using a coordinate system.
Point	A specific location in the coordinate system, represented by an ordered pair (x, y).
Line	A straight path that continues indefinitely in both directions, represented by the equation of a line.
Distance	The length between two points (x_1, y_1) and (x_2, y_2), calculated using the distance formula: $$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
Midpoint	The point that is an equal distance between two given points (x_1, y_1) and (x_2, y_2), calculated using the midpoint formula: $$(x_{mid}, y_{mid}) = \left(\frac{(x_1 + x_2)}{2}, \frac{(y_1 + y_2)}{2}\right)$$
Gradient	The slope of a line, m, calculated as the change in y-coordinate (rise) divided by the change in x-coordinate (run) between any two given points (x_1, y_1) and (x_2, y_2) on the line. $$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$
Equation of a Line	The equation that describes the relationship between the x and y coordinates of points on a line, written in the form: $$y = mx + c$$ Where m is the slope and c is the y-intercept.
Parallel Lines	Two lines that have the same slope and do not intersect.
Perpendicular Lines	Two lines that intersect at right angles (90 degrees), with the product of their slopes being -1.
Intersecting Lines	Two lines that cross each other at a single point.