



O Level Maths

Topic: Gradient and Equation of a Line

Instructions

Answer all questions. Show all necessary steps. Use the gradient and equation of a line formulas appropriately.

Practice Problems

Gradient of a Line:

1. Find the gradient of the line passing through the points $A(1, 2)$ and $B(3, 8)$.
2. Calculate the gradient of the line joining the points $P(-2, -1)$ and $Q(4, 5)$.
3. Find the gradient of the line through the points $(0, 4)$ and $(6, 10)$.
4. Determine the gradient of the line passing through $A(2, 4)$ and $B(5, 7)$.

Equation of a Line:

5. Find the equation of the line passing through $A(1, 2)$ with a gradient of $m = 3$.
6. Determine the equation of the line that passes through the points $(4, 5)$ and $(6, 7)$.
7. Write the equation of the line with a gradient of $m = -2$ passing through the point $(3, 4)$.
8. Find the equation of the line parallel to $2x + 3y = 6$ and passing through the point $(1, 2)$.

Multiple-Choice Questions

1. The gradient of the line passing through the points $(1, 2)$ and $(3, 6)$ is:
 - A. 2
 - B. 3
 - C. 1
 - D. 4
2. The equation of the line with gradient $m = 2$ passing through the point $(0, -1)$ is:
 - A. $y = 2x + 1$
 - B. $y = 2x - 1$
 - C. $y = -2x + 1$
 - D. $y = -2x - 1$
3. Which of the following lines has a gradient of -1 ?
 - A. $2x + y = 3$
 - B. $y = x + 2$
 - C. $x + y = 4$
 - D. $y = -x + 4$
4. What is the gradient of the line $3x - 2y = 4$?
 - A. $2/3$
 - B. $-3/2$
 - C. $3/2$
 - D. $-2/3$
5. The equation of a line is $y - 3 = 4(x - 1)$. What is the gradient of the line?
 - A. 4
 - B. -4
 - C. $1/4$
 - D. $-1/4$

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