

108. Interpreting Gradients Graphically and Algebraically

Practice Questions

1. What is the gradient of $y = 3x + 5$?
2. Find the gradient of the line passing through $(1, 2)$ and $(4, 8)$.
3. Identify the gradient of $y = -5x + 2$.
4. Find the gradient of the line passing through $(-3, -5)$ and $(3, 7)$.
5. Does the line $y = \frac{1}{4}x + 6$ have a positive or negative gradient?
6. Find the gradient of $3y = 9x - 12$.
7. A line has a gradient of -2 . Write an equation for a line with this gradient.
8. Find the gradient of the line passing through $(5, 10)$ and $(10, 20)$.
9. Identify the gradient of $y = -x + 4$.
10. What does a gradient of 0 mean on a graph?

Scenario Questions

1. A cyclist's journey is represented by $y = 4x + 5$ on a distance-time graph. What does the gradient represent?
2. A hill follows the equation $y = 3x - 2$. What does the gradient 3 represent?
3. A car's speed over time is shown by $y = 2x + 10$. Interpret the gradient 2 in this context.
4. A plumber charges a base fee and £25 per hour. Write an equation and interpret the gradient.
5. A boat's altitude decreases following $y = -\frac{1}{2}x + 30$. What does the gradient $-\frac{1}{2}$ represent?
6. A ski slope has an equation $y = -3x + 20$. What does the gradient -3 represent?
7. A train accelerates following $y = 5x + 2$ on a speed-time graph. Interpret the gradient.
8. A fuel tank is filled following $y = 10x + 50$. What does the gradient 10 mean?
9. A factory produces goods following $y = 7x + 100$. What does the gradient 7 represent?
10. A diver's depth is given by $y = -4x + 2$. What does the gradient -4 mean?

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Practice Questions

1. Gradient: 3
2. Gradient: 2
3. Gradient: -5
4. Gradient: 2
5. Positive gradient
6. Gradient: 3
7. $y = -2x + c$
8. Gradient: 2
9. Gradient: -1
10. A horizontal line

Scenario Questions

1. The gradient represents the speed of the cyclist.
2. The gradient 3 represents the steepness of the hill.
3. The gradient 2 represents the acceleration of the car.
4. Equation: $y = 25x + c$; the gradient 25 represents the hourly rate.
5. The gradient $-\frac{1}{2}$ represents the rate of altitude decrease.
6. The gradient -3 represents the steepness of the ski slope.
7. The gradient 5 represents the acceleration of the train.
8. The gradient 10 represents the rate at which the fuel tank is being filled.
9. The gradient 7 represents the production rate of goods.
10. The gradient -4 represents the rate at which the diver is descending.