# Finding the Equation of a Line

*The equation of a straight line can be written in the form $y = mx + c$.*
*Where $m$ is the **gradient** (steepness) and $c$ is the **y-intercept** (where the line crosses the y-axis).*

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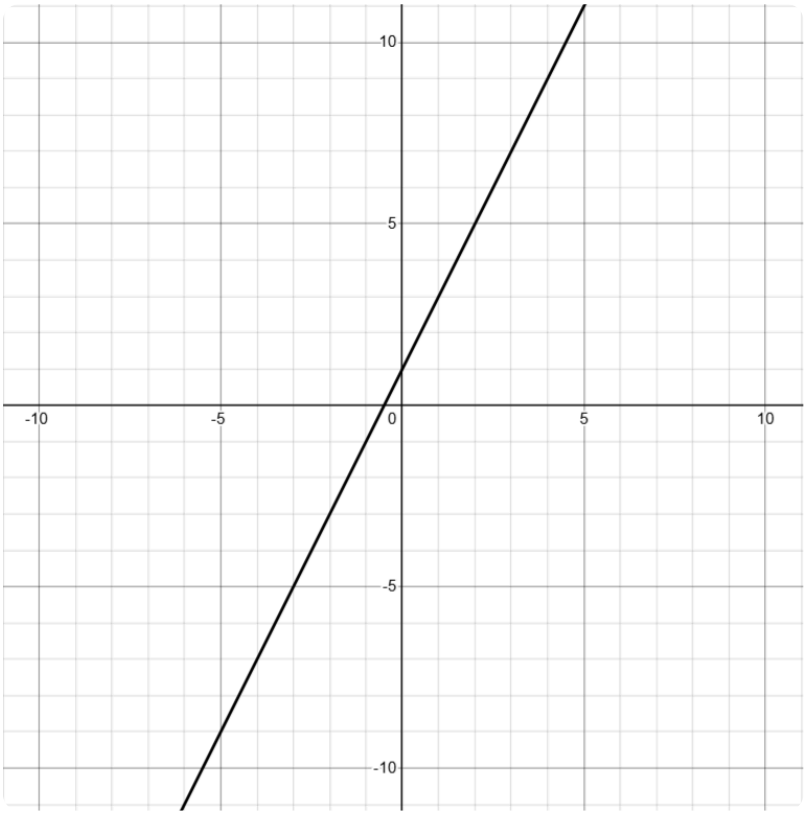
**Part A: Finding the Equation from a Graph**

1. For the line shown below, find its gradient, y-intercept, and write the full equation.

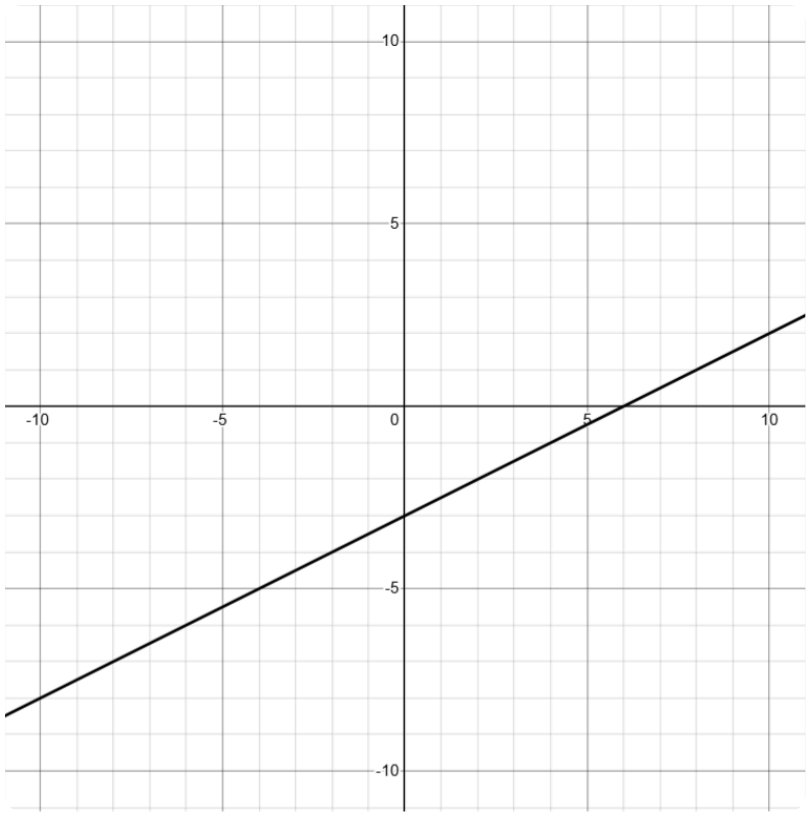



Gradient $(m)$: _____

Y-intercept $(c)$: _____

Equation: _____

2. For the line shown below, find its gradient, y-intercept, and write the full equation.

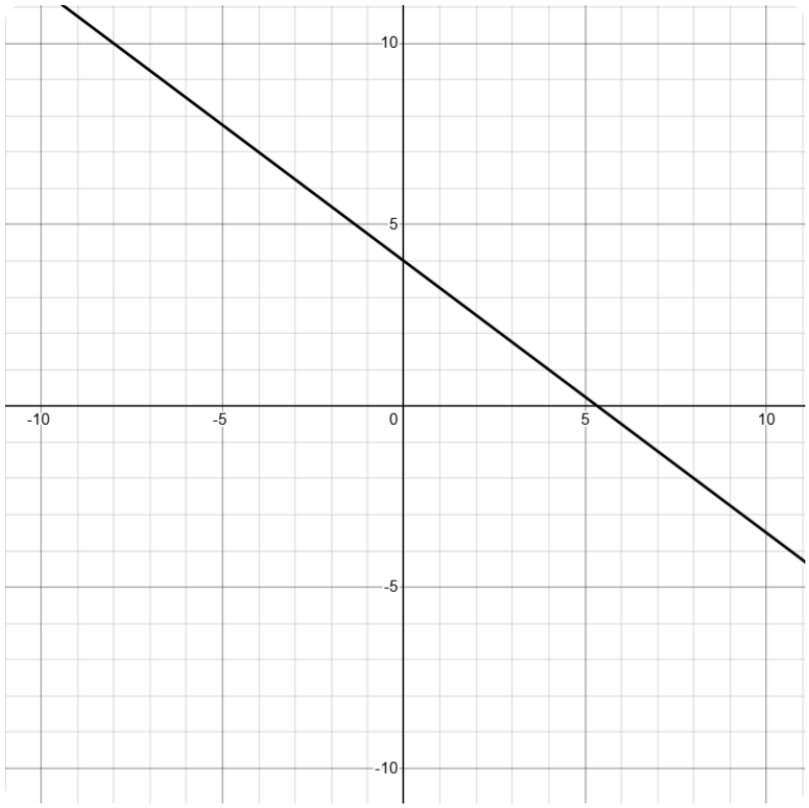



Gradient ($m$): _____

Y-intercept ($c$): _____

Equation: _____

2. For the line shown below, find its gradient, y-intercept, and write the full equation.



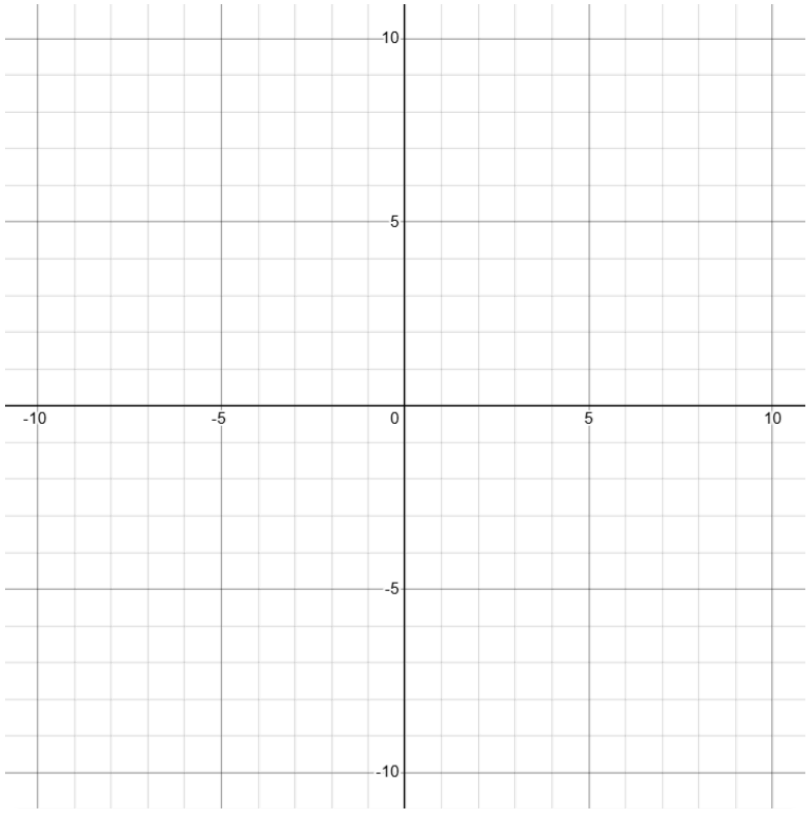

Gradient ($m$): _____

Y-intercept ($c$): _____

Equation: _____

**Part B: Finding the Equation from the Gradient and a Point**

3. A line has a gradient of $m = 3$ and passes through the point $(-1, -2)$. Find the equation of the line. You can check your answer by plotting the line on the grid.

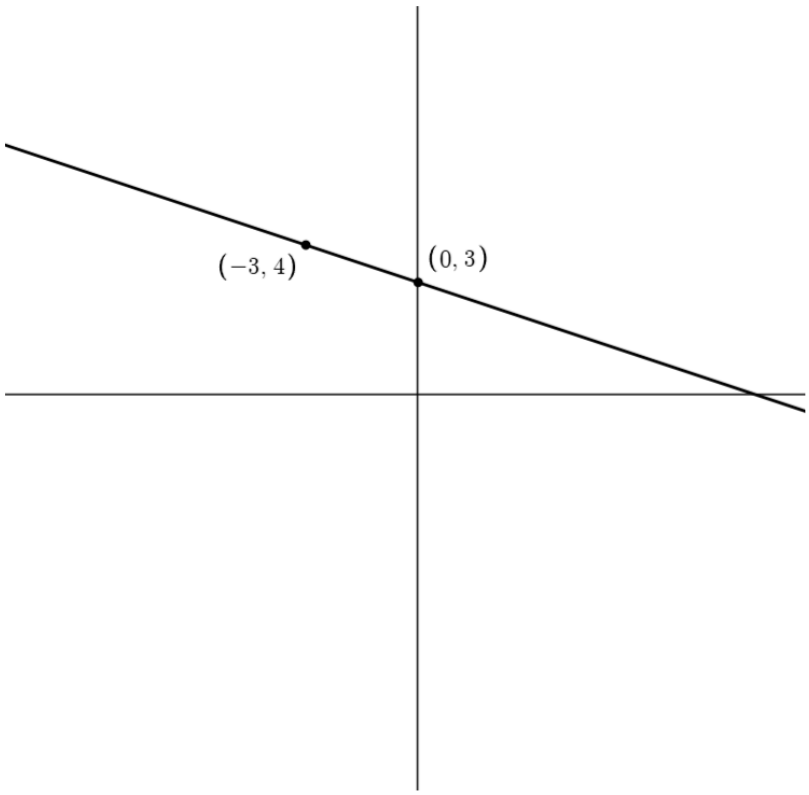



Equation: _____

4. Find the equation of the line that has a gradient of $m = -2$ and passes through the point $(3, -4)$.
Equation: _____

**Part C: Finding the Equation from Two Points**

5. A line passes through the points $(-3, 4)$ and $(3, 0)$. Find the equation of the line.

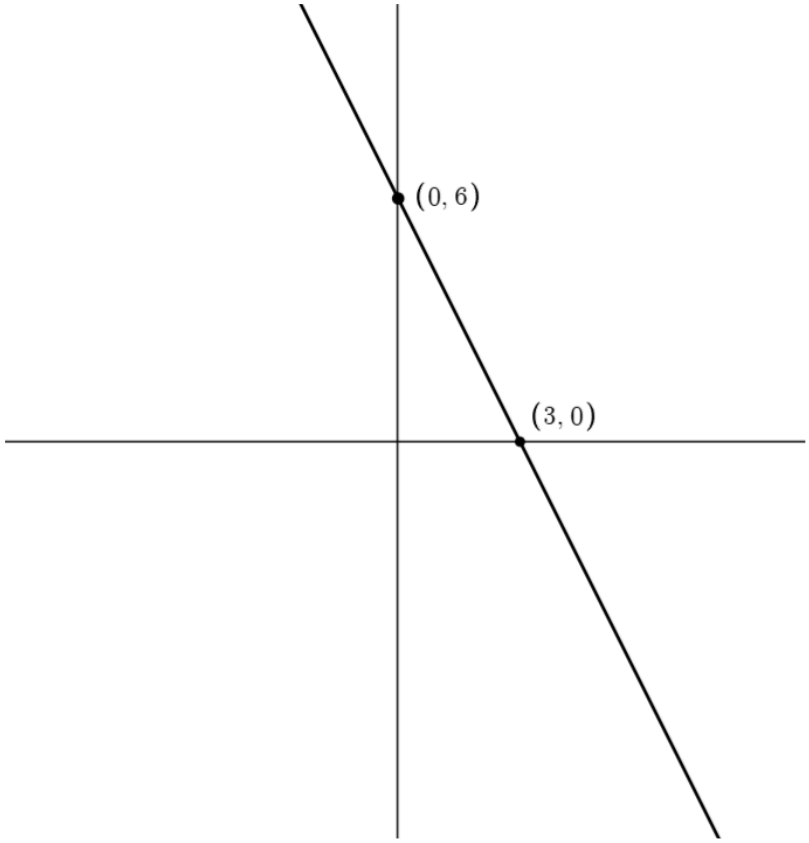



Equation: _____

6. Find the equation of the line that passes through the points $(2, 9)$ and $(5, 3)$.

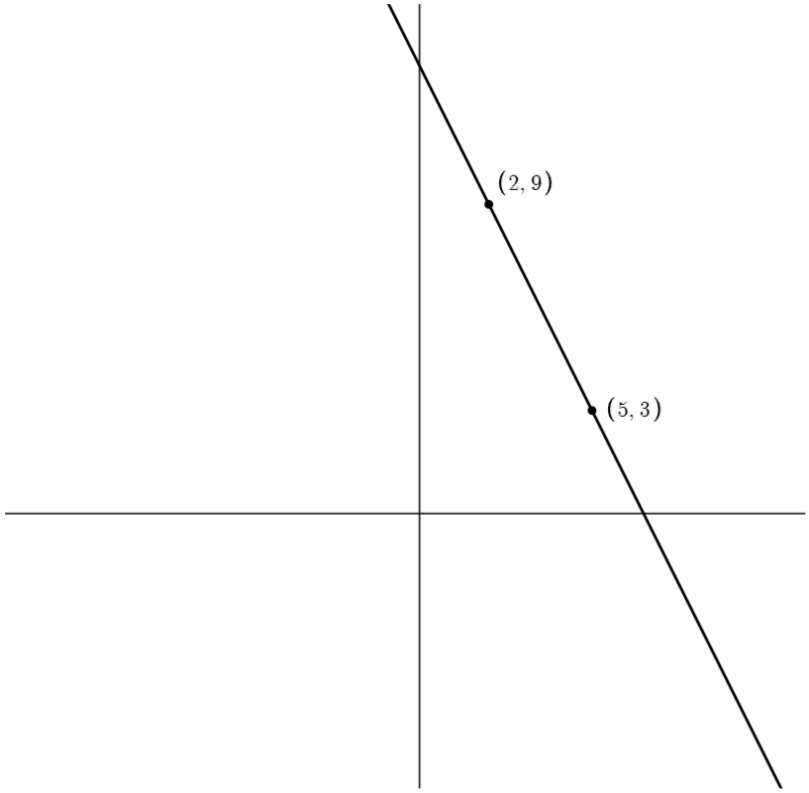
Equation: _____

6. Find the equation of the line shown.



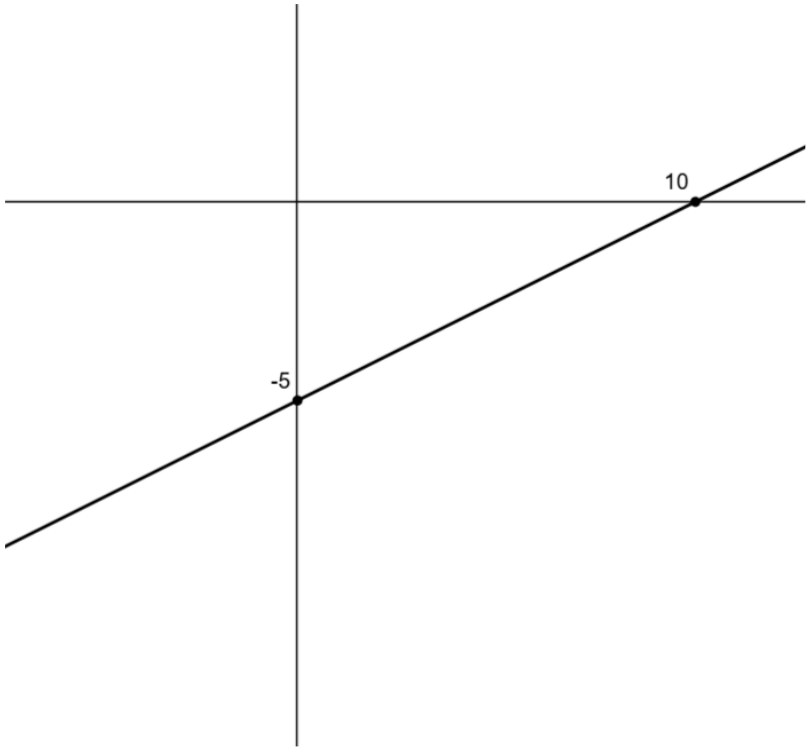

Equation: _____

6. Find the equation of the line shown.




Equation: _____

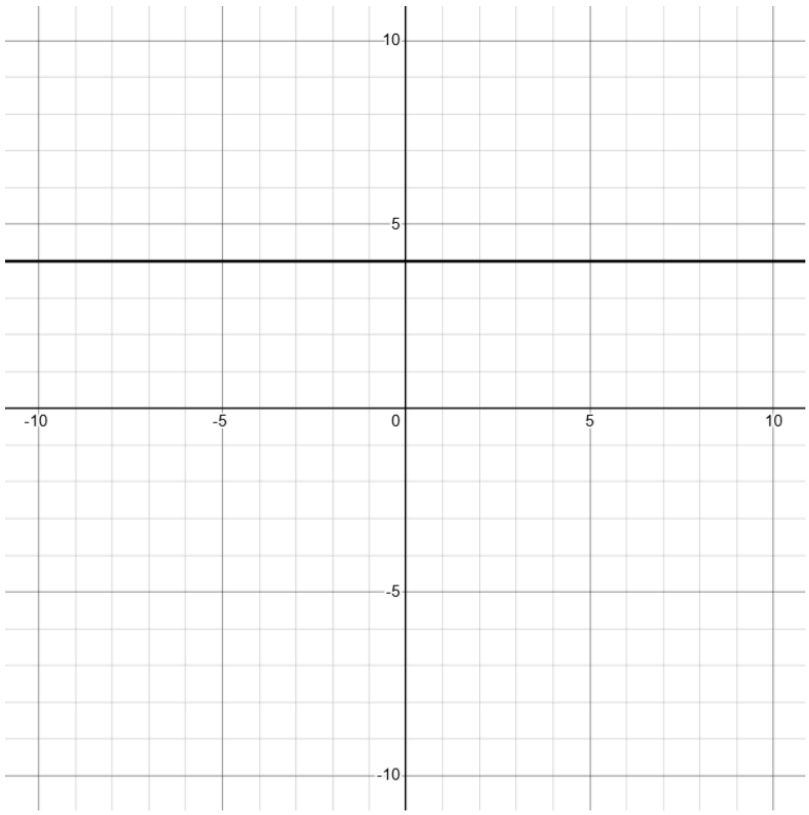
6. Find the equation of the line shown.




Equation: _____

**Part D: Special Cases**

7. Find the equation of the horizontal line shown below.

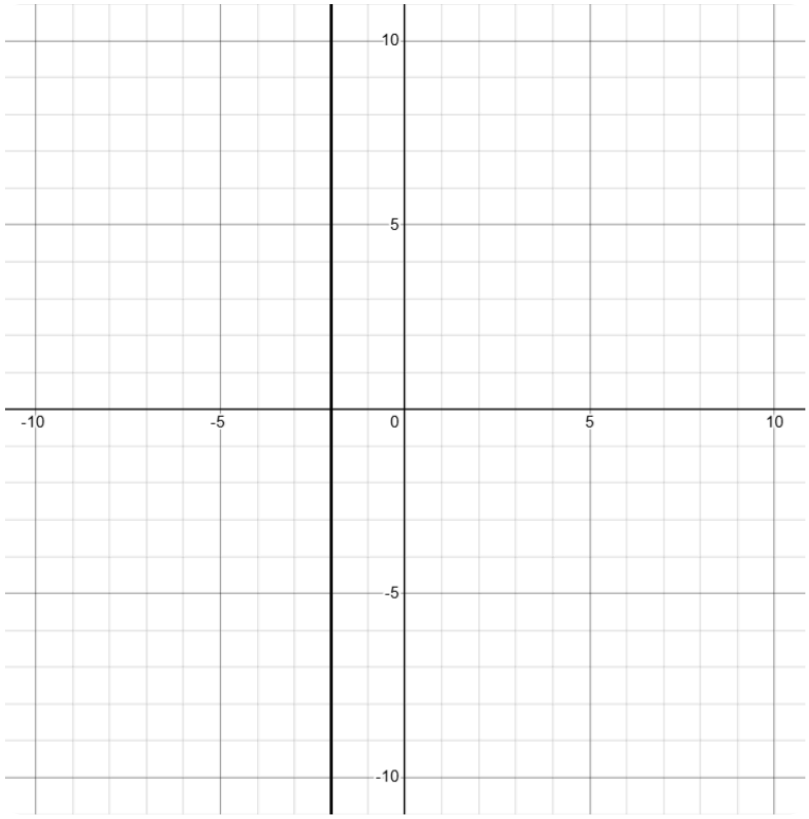



Equation: _____

8. A vertical line passes through the point $(4, -1)$. Write the equation of this line.

Equation: _____

7. Find the equation of the line shown below.




Equation: _____