

Geometry
3.5 Equations of a Line

Name: Key
Date: _____ Period: _____

Fill in the blanks.

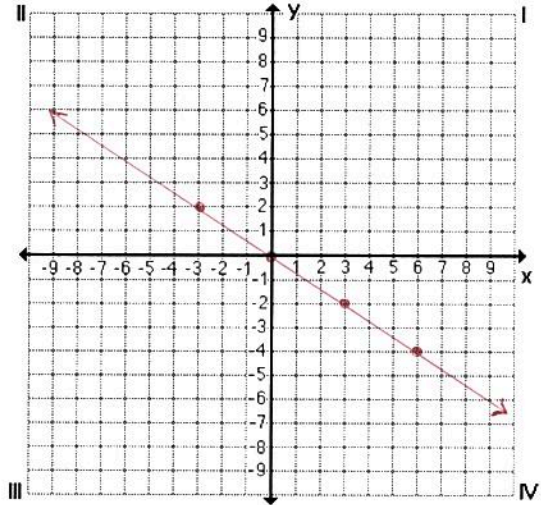
1. Vertical lines have undefined slopes.
2. Horizontal lines have zero slopes.
3. Parallel lines have equal slopes.
4. Perpendicular lines have opp. reciprocal slopes.

Find the equation of the line in *standard form*, then graph the line.

5. $m = -\frac{2}{3}, (0, 0)$

$$y - 0 = -\frac{2}{3}(x - 0)$$

$$y = -\frac{2}{3}x$$

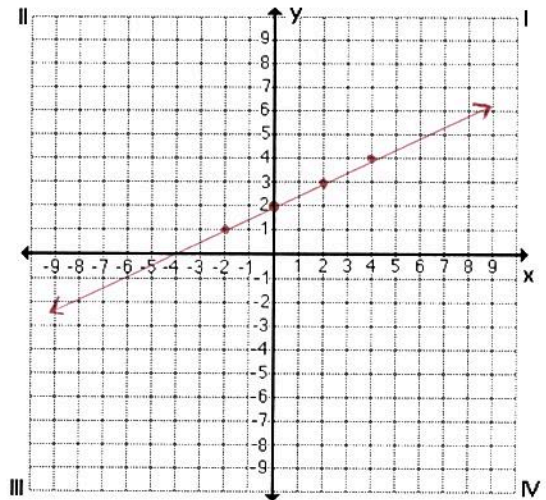


6. $m = \frac{1}{2}, (0, 2)$

$$y - 2 = \frac{1}{2}(x - 0)$$

$$y - 2 = \frac{1}{2}x$$

$$y = \frac{1}{2}x + 2$$



Find the equation of the line in *standard form*, then graph the line.

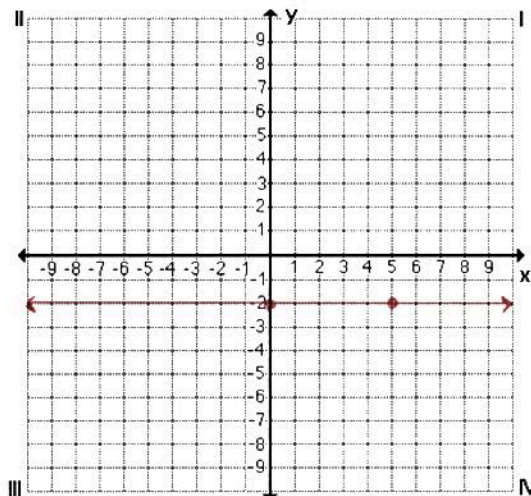
7. $m = 0, (5, -2)$

$$y + 2 = 0(x - 5)$$

$$y + 2 = 0$$

$$y = -2$$

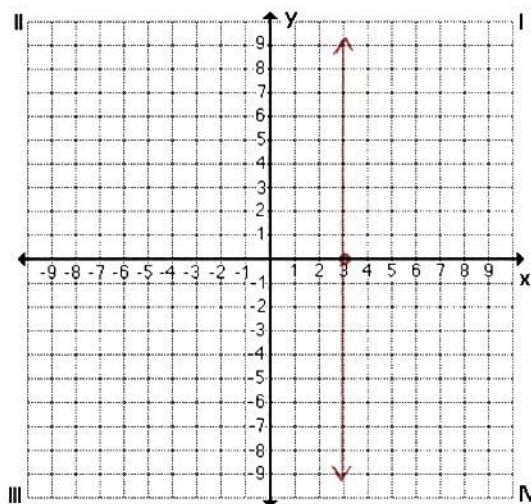
Horizontal Lines
have zero slopes



* 8. $m = \infty, (3, 0)$

$$x = 3$$

Vertical Lines
have undefined slopes



9. The line *perpendicular* to $y = 2x + 3$
that goes through $(3, -2)$

$$m = 2$$

$$m_{\perp} = -\frac{1}{2}$$

$$y + 2 = -\frac{1}{2}(x - 3)$$

$$y + 2 = -\frac{1}{2}x + \frac{3}{2}$$

$$y = -\frac{1}{2}x + \frac{3}{2} - 2$$

$$y = -\frac{1}{2}x + \frac{3}{2} - \frac{4}{2}$$

$$y = -\frac{1}{2}x - \frac{1}{2}$$

