

**[MODULE 3: EQUATION OF A LINE  
PARALLEL AND PERPENDICULAR LINES]**

Name: \_\_\_\_\_

Points: \_\_\_\_\_

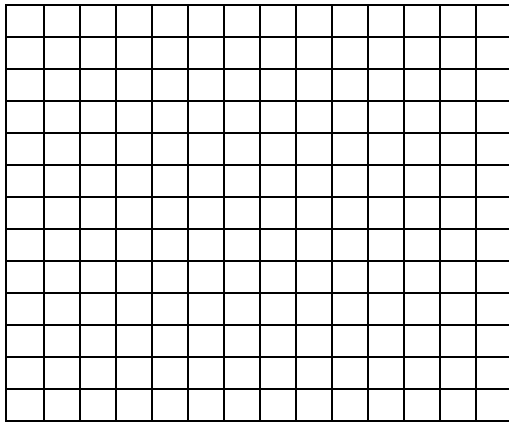
Given two points  $(x_1, y_1)$  and  $(x_2, y_2)$ , the formula for finding the slope is \_\_\_\_\_

**Slope-Intercept Form of the Equation of a Line:** The equation of any line with slope  $m$  and  $y$ -intercept  $b$  is given by \_\_\_\_\_.

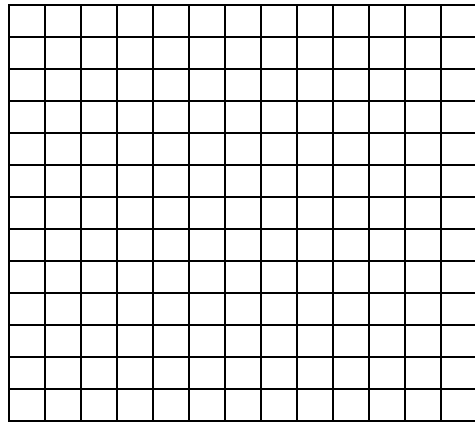
**Point-Slope Form of the Equation of a Line:** The equation of the line through  $(x_1, y_1)$  with slope  $m$  is given by \_\_\_\_\_.

1. Graph by the  $y = mx + b$  method

a. Graph  $y = -2x + 6$

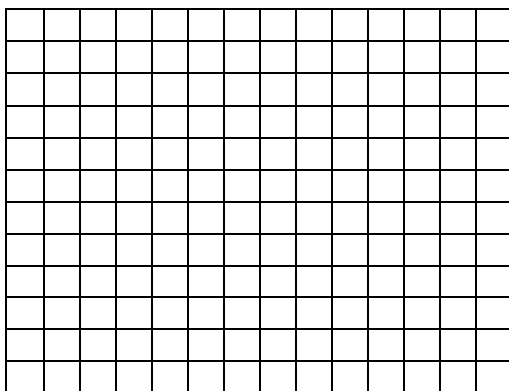


b. Solve the equation for  $y$  and graph:  $2x - 3y = 9$

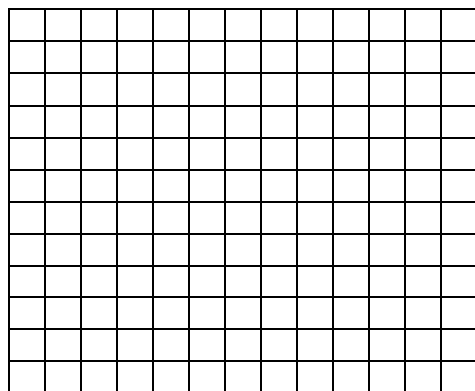


2. Special Lines: The graph of  $y = a$  is a horizontal line through  $(0, a)$   
The graph of  $x = a$  is a vertical line through  $(a, 0)$

a. Graph  $y = 5$



b. Graph  $x = -3$



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3. Find the equation of the line with slope  $-\frac{2}{3}$  and y-intercept  $(0,4)$ .
4. Give the slope and y-intercept for the line  $x - 2y = 1$ .
5. Find the equation of the line that passes through the points  $(-4,5)$  and  $(-7,4)$ .

Parallel Lines: Non vertical parallel lines have the same \_\_\_\_\_ .

Perpendicular Lines: The slopes of perpendicular lines are \_\_\_\_\_ .

6. a. Write an equation of a line passing through the point  $(-2,1)$  and perpendicular to  $y = \frac{2}{3}x - 10$
- b. Write an equation of a line passing through the point  $(5,1)$  and parallel to  $y = -\frac{2}{5}x + 1$

7. Write an equation of a line passing through the point  $(-12,3)$  and
- a. parallel to  $4x - 3y = 7$
- b. perpendicular to  $4x - 3y = 7$