

**GRADE 11 ESSENTIAL  
RELATIONS AND PATTERNS  
WORKSHEET 1**

**Name:** \_\_\_\_\_  
**Date:** \_\_\_\_\_

**PLOTTING LINES – SLOPE INTERCEPT AND GENERAL FORMS**

1. What is the slope and y-intercept of the following equations? Start at question 2 first will help!

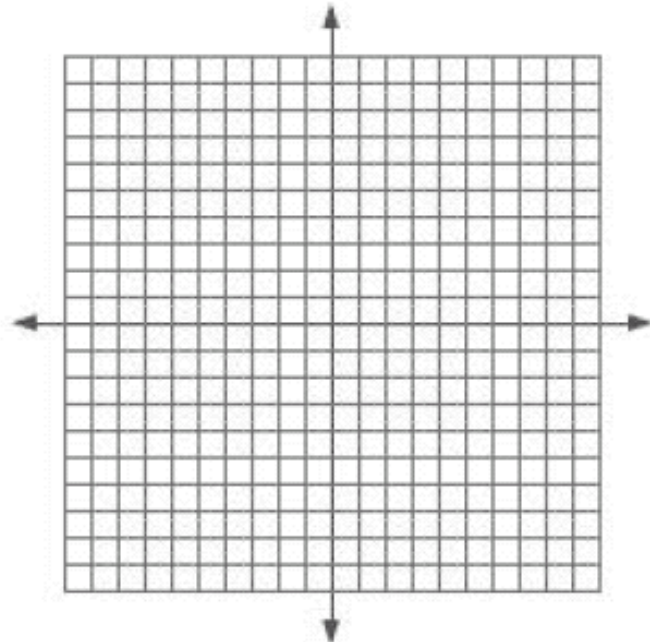
$y = 3x + 2$ Slope (m) = _____ Y-Intercept (b) = _____	$y = 2x - 5$ Slope (m) = _____ Y-Intercept (b) = _____	$y = -3x + 2$ Slope (m) = _____ Y-Intercept (b) = _____
$y = -x + 2$ Slope (m) = _____ Y-Intercept (b) = _____	$y = \frac{3}{5}x + 2$ Slope (m) = _____ Y-Intercept (b) = _____	$y = -\frac{5x}{8} - 4$ Slope (m) = _____ Y-Intercept (b) = _____

2. Plot the lines given the slope and intercept form,  $y = mx + b$ .

a.  $y = 3x + 2$

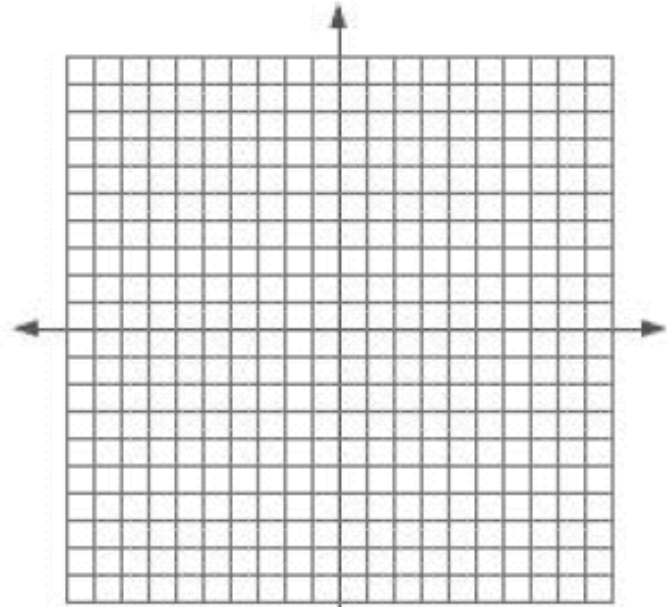
$$\text{slope} = m = \frac{\text{rise}}{\text{run}} = \frac{3}{1}$$

for every 1 you run right, you rise 3

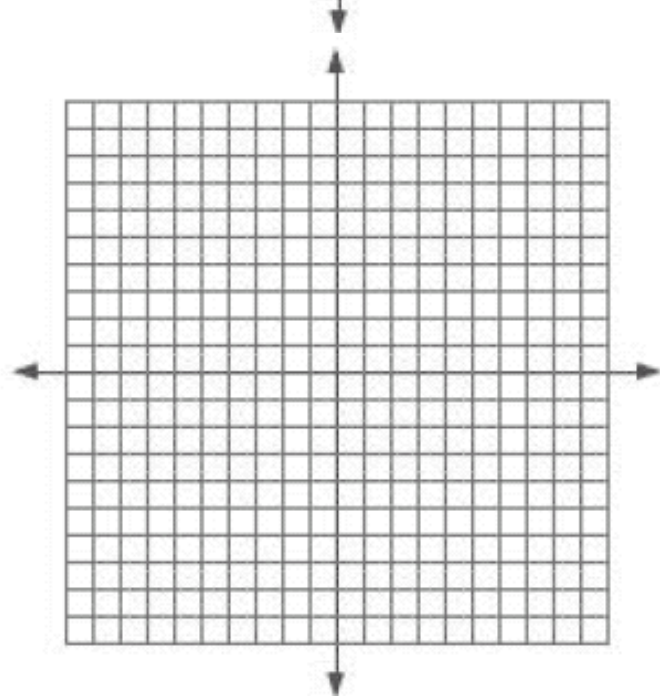


b.  $y = -3x + 5$

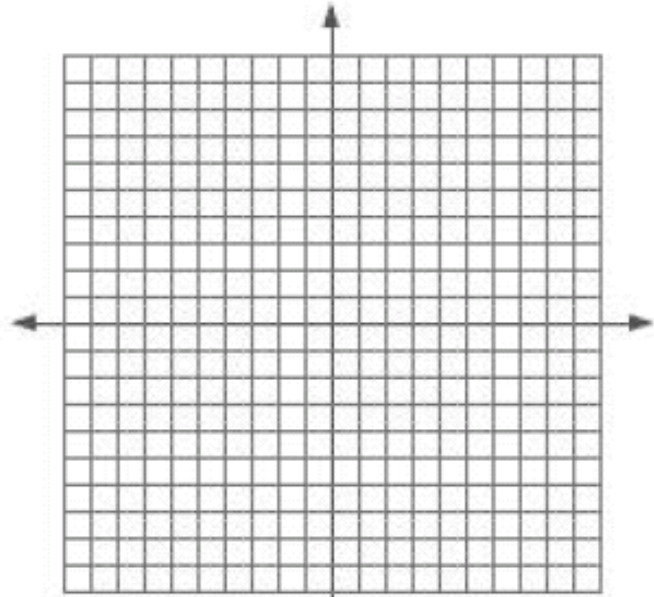
$\text{slope} = m = \frac{\text{rise}}{\text{run}} = \frac{-3}{1}$   
for every 1 you run right,  
you drop 3



c.  $y = \frac{3}{8}x + 4$

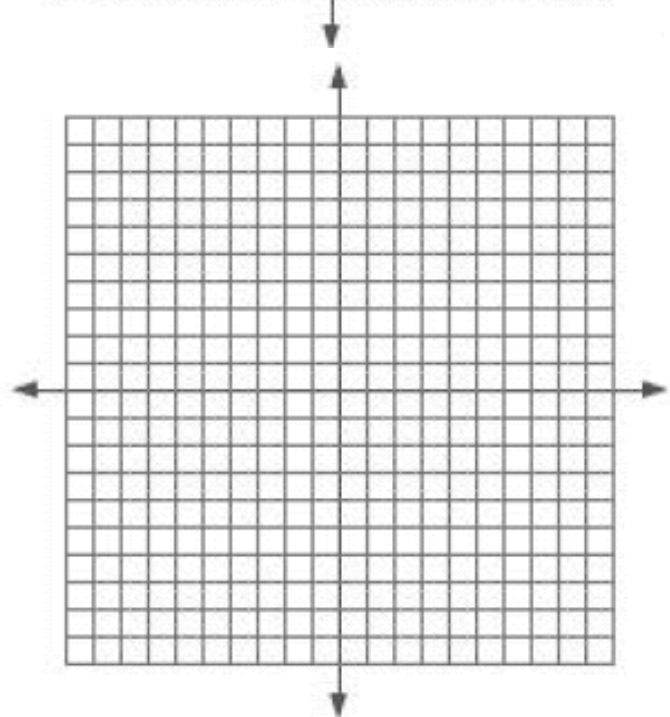


d.  $y = -\frac{3}{5}x + 7$



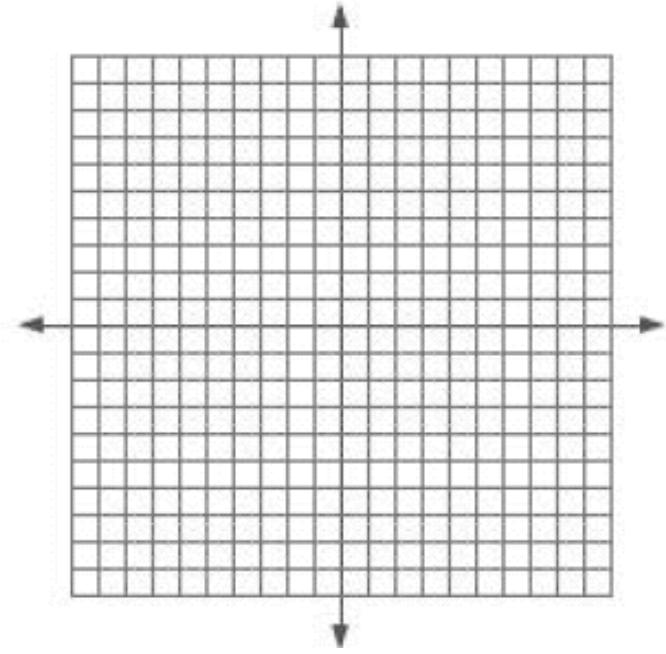
e.  $y = 0.25x - 3$

*Hint: Slopes are a lot easier as fractions!*



f.  $y = -2.6x - 7$

Hint : 2.6 is  $\frac{26}{10}$  or  $\frac{13}{5}$



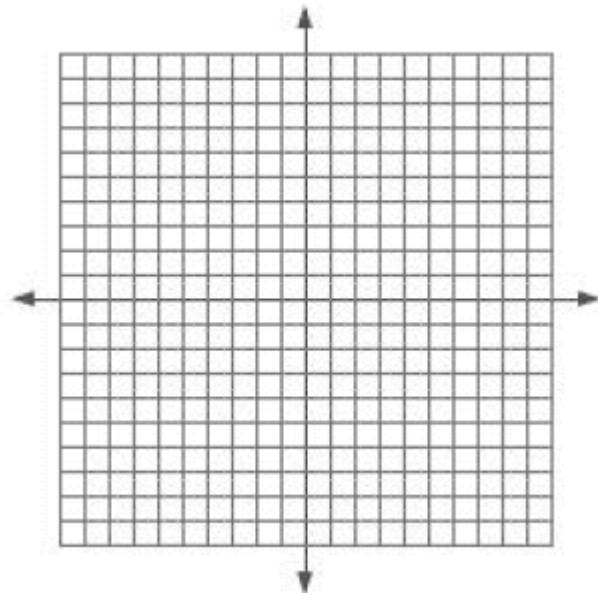
3. Plot the lines given the GENERAL form (some books call it the standard form!)

a.  $3x - 2y = 6$

x	y
0	
	0

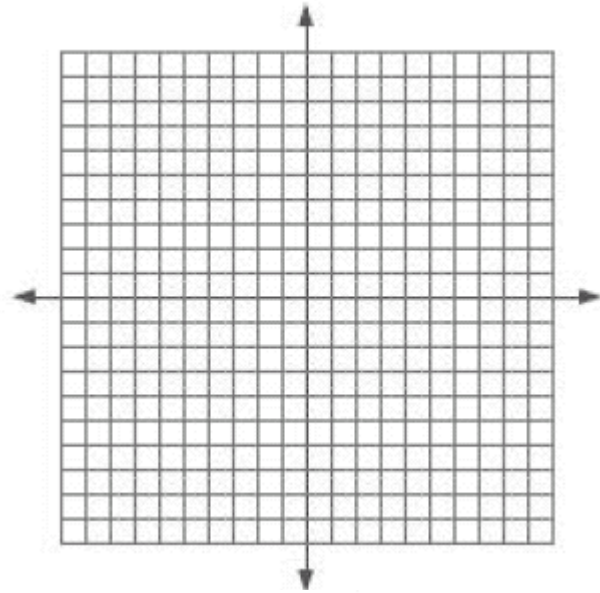
When  $x = 0$ ,  $y =$  \_\_\_\_\_

When  $y = 0$ ,  $x =$  \_\_\_\_\_

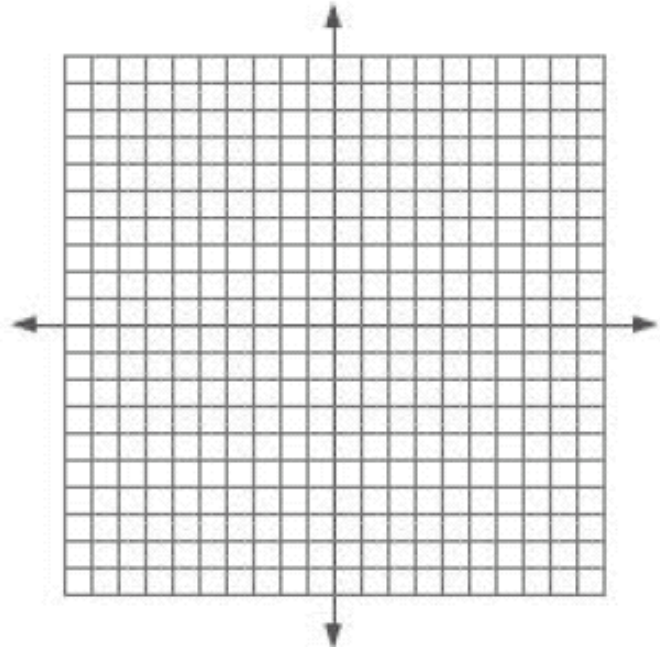


b.  $20x + 10y = 100$

$x$	$y$
0	
	0

When  $x = 0$ ,  $y = \underline{\hspace{2cm}}$ When  $y = 0$ ,  $x = \underline{\hspace{2cm}}$ 

c.  $3x + 5y = 75$

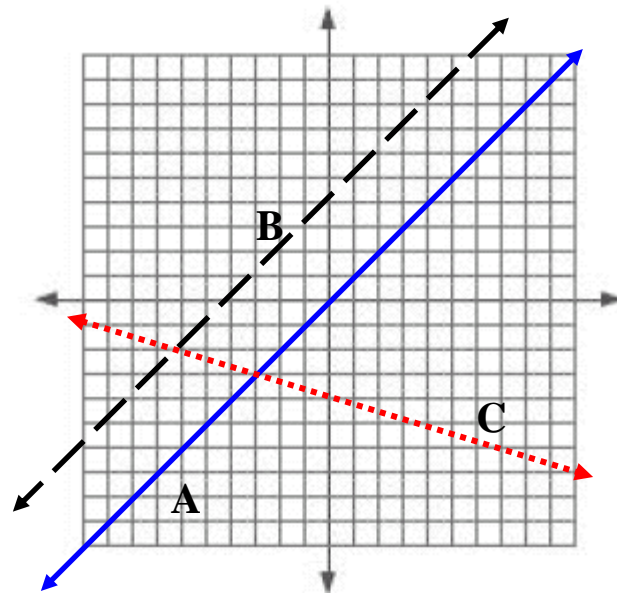


4. What is the equation of each of the labeled lines?

A. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_



### Formulas

$$\text{Slope} = m = \frac{\text{Rise}}{\text{Run}} = \frac{\Delta y}{\Delta x} = \frac{(y_2 - y_1)}{(x_2 - x_1)}$$

**Slope-Intercept form of a line:**  $y = mx + b$  where **m** is slope and **b** is the y-intercept

**General Form of a line:**  $Ax + By = C$  where **A**, **B**, **C** are real numbers