

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

Period: \_\_\_\_\_

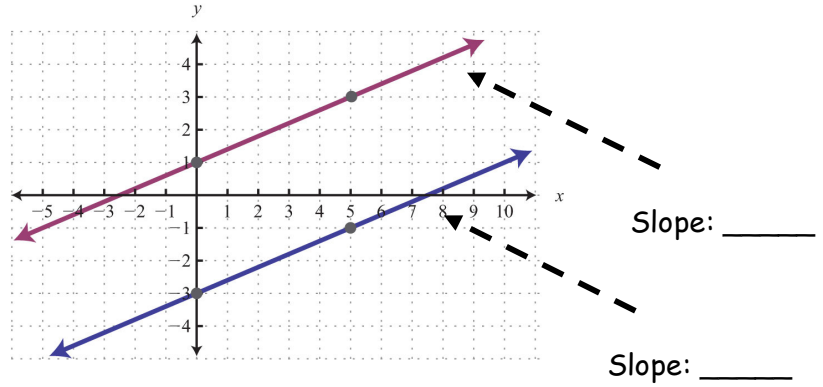
Unit 2 Lesson 6 and 7

**Equations of Parallel Lines**

**Do Now: Find the slopes of each line**

By finding the slopes of the parallel lines shown to the right, we discovered the concept:

Parallel Lines have  
\_\_\_\_\_



Using the information, we just discovered, let's solve each problem algebraically below.

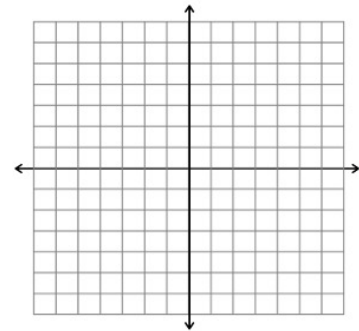
Write the equation of a line that is parallel to the line  $y = 2x - 4$  and contains the point  $(1, -3)$ .

**CHECK**

For the first one, let's check our answer graphically.

Pass through  $(1, -3)$ ? \_\_\_\_\_

Parallel (same slope)? \_\_\_\_\_



Write the equation of the line that is parallel to the line  $y = -\frac{1}{3}x + 2$  and contains the point  $(-3, -2)$ .

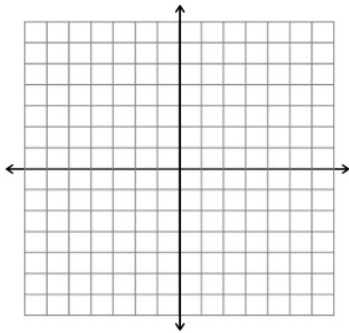
Write the equation of the line that is parallel to the line  $3x + 2y = 6$  and contains the point  $(2, -2)$

---

Line A passes through the points  $(2, 4)$  and  $(1, 3)$ . Write the equation of a line that is parallel to Line A and passes through the point  $(0, 0)$ .

---

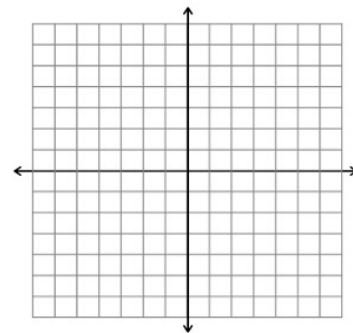
Write the equation of a line that is parallel to  $y = 2$  and passes through the point  $(1, -2)$ .



Equation: \_\_\_\_\_

Rule:

Write the equation of a line that is parallel to  $x = 3$  and passes through the point  $(-1, -1)$ .



Equation: \_\_\_\_\_

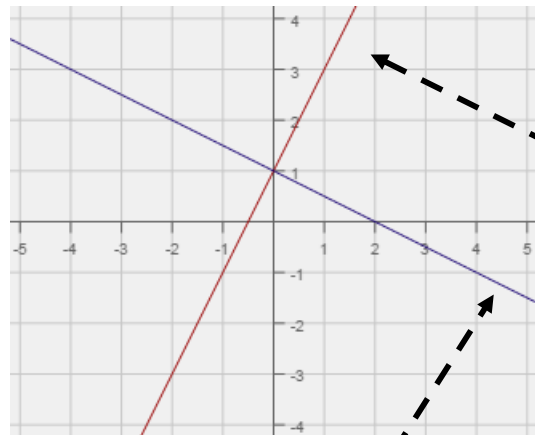
Rule:

### Equations of Perpendicular Lines

Do Now: Find the slope of each line

By finding the slopes of the perpendicular lines shown to the right, we discovered the concept:

perpendicular Lines have



Slope: \_\_\_\_\_

Slope: \_\_\_\_\_

Practice writing negative reciprocal slopes

$\frac{2}{3} \rightarrow$

$-\frac{4}{3} \rightarrow$

$\frac{1}{2} \rightarrow$

$-3 \rightarrow$

$2 \rightarrow$

$\frac{7}{8} \rightarrow$

$-\frac{10}{7} \rightarrow$

$5 \rightarrow$

Using the information, we just discovered, let's solve each problem algebraically below.

Write the equation of a line that is perpendicular to the line  $y = -\frac{3}{4}x - 3$  and contains the point (3, 3).

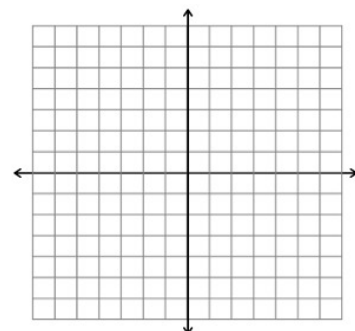
### CHECK

For the first one, let's check our answer graphically.

Pass through (3, 3)? \_\_\_\_\_

perpendicular (- reciprocal slope)?

\_\_\_\_\_



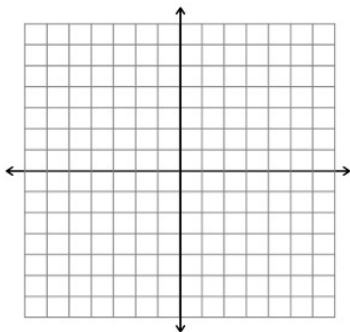
Write the equation of a line that is perpendicular to the line  $y = 4x + 2$  and passes through the point  $(-2, 7)$ .

---

Line A passes through the points  $(1, 4)$  and  $(6, 8)$ . Write the equation of a line that is perpendicular to Line B and passes through the point  $(3, 2)$ .

---

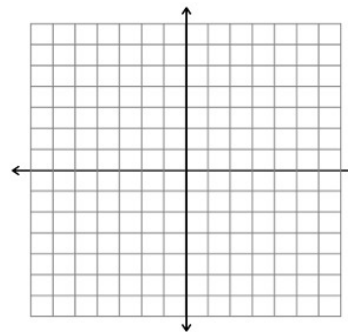
Write the equation of a line that is perpendicular to  $y = 2$  and passes through the point  $(1, -2)$ .



Equation:

Rule

Write the equation of a line that is perpendicular to  $x = 3$  and passes through the point  $(-1, -1)$ .



Equation:

Rule:

Equation: