Level 2/3:

Goals:

> **I have mastered <u>level 2</u> when I can:**
>> **Identify Parallel Slopes from a Graph and Equation**
>>
>> **Create a parallel equation given an equation or graph**
>
> **I have mastered <u>level 3</u> when I can:**
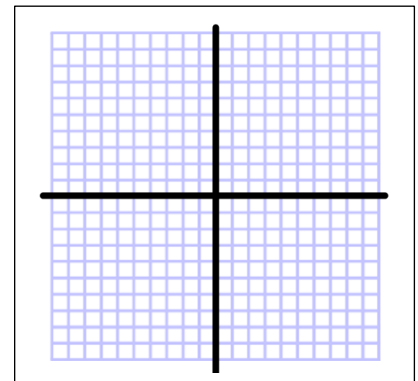>> **Identify Perpendicular Slopes from a Graph and Equation**
>>
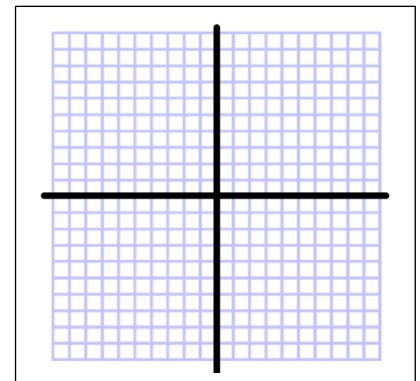>> **Create a Perpendicular equation given an equation or graph**

Notes:

Big Ideas	Examples/Details
Examples of Parallel Equations & Graphs	

Big Ideas	Examples/Details
Slopes are Parallel when…	
Examples of Perpendicular Equations & Graphs	

Slopes are
Perpendicular when…

Level 2 Practice:

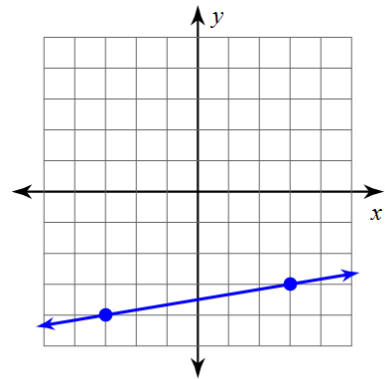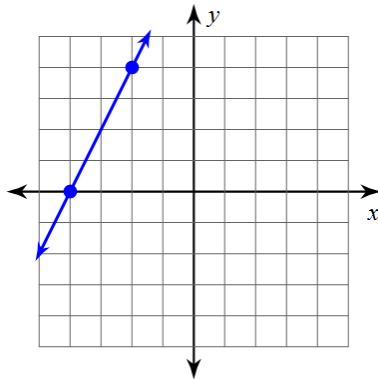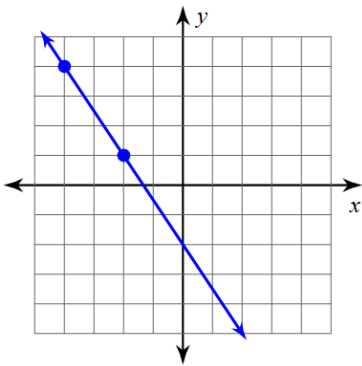Find the slope of a line parallel to each given line.

1) $y = 2x + 4$

2) $y = -\frac{2}{3}x + 5$

3) $y = 4x - 5$

4) $y = -\frac{10}{3}x - 5$

For each graph below, write an equation for a parallel line.

Level 3 Practice:

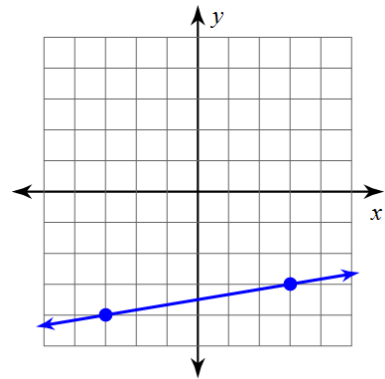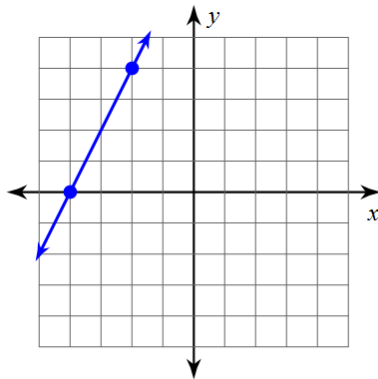Find a slope that is perpendicular
For each equation below

Find a slope that is perpendicular to the line that goes through each of the two points below.

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

$y = \frac{4}{5}x$

1) through: $(-5, -4)$ and $(0, -5)$

2) through: $(-2, -1)$ and $(0, -4)$

For each graph below, write an equation for a perpendicular line.
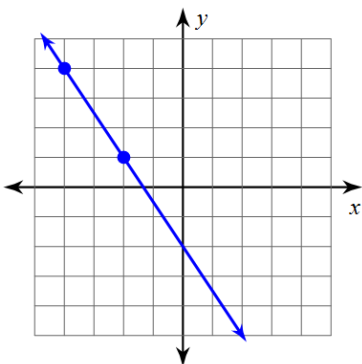
Worksheet Level 2: Parallel & Perpendicular

Practice #1

Write an equation for a line that is parallel to the given information.
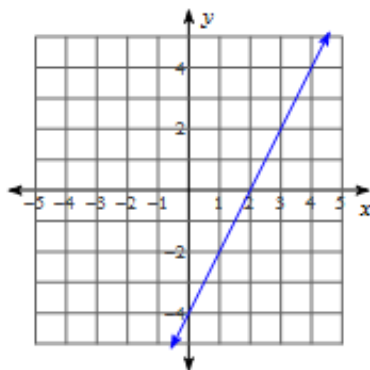
1) Slope $= \dfrac{1}{3}$, y-intercept $= 3$

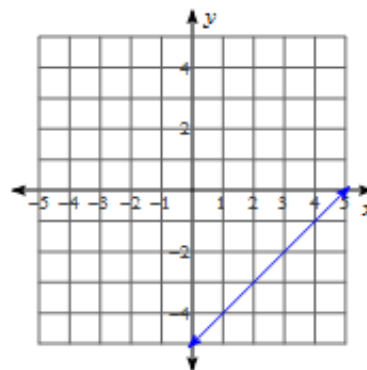2) Slope $= \dfrac{1}{3}$, y-intercept $= 0$

3) Slope $= -\dfrac{4}{3}$, y-intercept $= 1$

4) Slope $= \dfrac{3}{4}$, y-intercept $= 5$

5)

6)

7) through: $(-3, -5)$ and $(3, 2)$

8) through: $(-3, 1)$ and $(-5, 3)$

9) through: $(-3, 3)$ and $(0, 3)$

10) through: $(2, 5)$ and $(-3, -3)$

Practice #2

Directions: Graph the points and use a ruler to draw the line that passes through them. Use the designated color to draw each line.

RED: (-3, 2)   (0, 4)

BROWN: (-5, -1)   (5, -5)
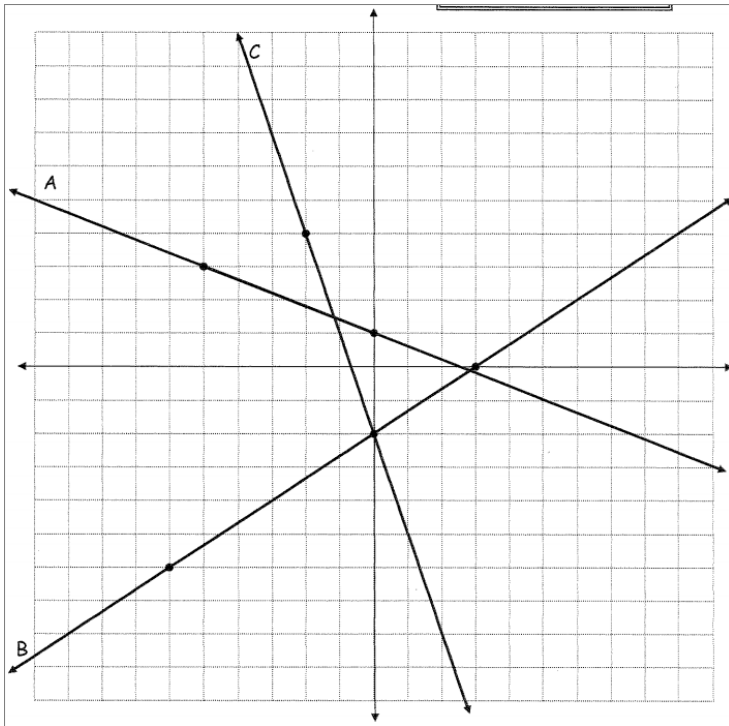
GREEN: (1, 1)   (2, -2)

Given Lines and Their Points

A: (0, 1)   (-5, 3)
B: (3, 0)   (-6, -6)
C: (-2, 4)   (0, -2)

Find the equations of lines A, B and C.

A	
B	
C	

Equations of the RED, BROWN, GREEN lines.

Red	
Brown	
Green	

Questions

Which line is parallel to line A? Write out the slopes of the two equations.

Which line is parallel to line B? Write out the slopes of the two equations.

Which line is parallel to line C? Write out the slopes of the two equations.

What do you notice about slopes of parallel lines?

# Worksheet Level 3: Parallel & Perpendicular

Practice #1

For each equation below, find the slope and y-intercept.

Then find an equation that is parallel and an equation that is perpendicular.

Equation	$y = 4x + 2$	$y = \frac{2}{7}x + 1$	$y = -\frac{1}{2}x + 1$	$y = -9x - 13$
Y-intercept				
Slope				
Parallel Equation				
Perpendicular Equation				

Practice #2

Create an equation for a perpendicular line that passes through the given point on the graph.
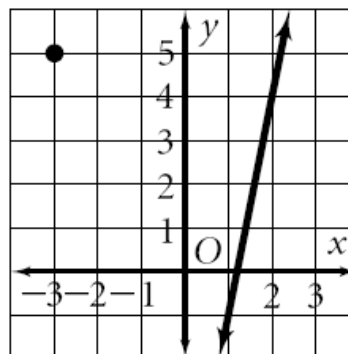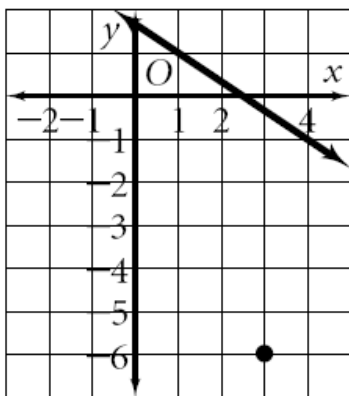
Practice #3

Directions: Graph the points and use a ruler to draw the line that passes through them. Use the designated color to draw each line.

BLUE: (0, 2)   (2, –1)
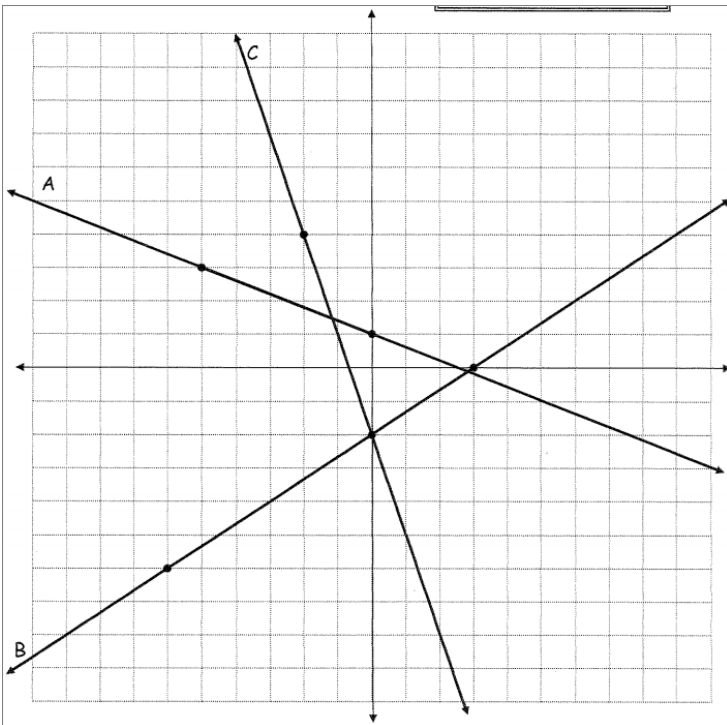
PURPLE: (–3, 6)   (–6, 5)

ORANGE: (4, 0)   (6, 5)

Given Lines and Their Points

A: (0, 1)   (–5, 3)
B: (3, 0)   (–6, –6)
C: (–2, 4)   (0, –2)

Find the equations of lines A, B and C.

A	
B	
C	

Equations of the BLUE, PURPLE, & ORANGE lines.

Blue	
Purple	
Orange	

Questions

Which line is perpendicular to line A? Write out the slopes of the two equations.

Which line is perpendicular to line B? Write out the slopes of the two equations.

Which line is perpendicular to line C? Write out the slopes of the two equations.

What do you notice about slopes of perpendicular lines?