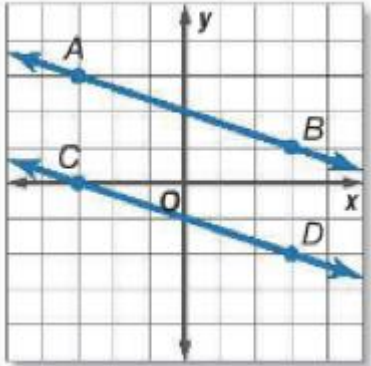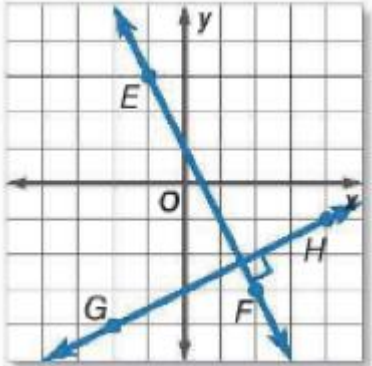**LEARNING TARGETS**

- I can identify parallel and perpendicular lines by examining slopes.
- I can write equations of parallel and perpendicular lines.

	Parallel Lines	**Perpendicular Lines**
Definition	Two lines are **parallel** if they have the _____ slope.	Two lines are **perpendicular** if their slopes are _____. **or**
Graph Models	 Slope of $\overleftrightarrow{AB}$, $m_1 = $ _____ Slope of $\overleftrightarrow{CD}$, $m_2 = $ _____	 Slope of $\overleftrightarrow{EF}$, $m_1 = $ _____ Slope of $\overleftrightarrow{GH}$, $m_2 = $ _____
Symbols		

Slope Criterion for Parallel Lines

Two non-vertical lines are parallel if and only if they have _____.
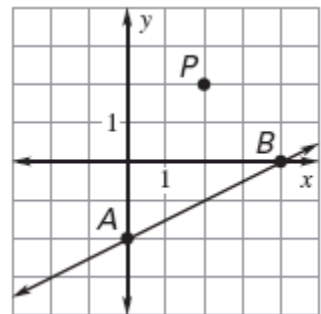
Vertical lines are _____.

Example 1: Find the slope of a line parallel to the line containing A(-3, 4) and B(2, 5).

Example 2: Write an equation of a line that is parallel to $y = \dfrac{2}{3}x + 7$

Example 3: Write an equation of the line passing through the point (3, 4) that is parallel to the line $y = -4x + 5$.

Example 4: Graph the line parallel to line *AB* that passes through point *P* and write its equation.

Check Point: Chose One!

1. Write an equation of the line passing through the point (-2, 5) that is parallel to the line $y = 2x - 7$.

2. Write an equation of the line passing through the point (3, 5) that is parallel to the line passing through (3, 3) and (-3, -1).

<div style="border:1px solid black; padding:10px;">

<u>Slope Criterion for Perpendicular Lines</u>

Two non-vertical lines are perpendicular if and only if _____.

Vertical lines and horizontal lines are _____.

</div>

Example 1: Find the slope of a line perpendicular to the line containing A(-3, 4) and B(2, 5).

Example 2: Write an equation of a line that is perpendicular to $y = \dfrac{2}{3}x + 7$

Example 3: Write an equation of the line passing through the point (6, -3) that is perpendicular to the $y = -4x + 5$

Example 4: Graph the line perpendicular to line *AB* that passes through point *P* and write its equation.
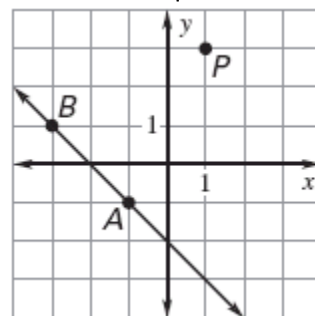
Check Point: Choose One!

1. Write an equation of the line passing through the point (-2, 5) that is perpendicular to the line $y = 2x - 7$

2. Write an equation of the line passing through the point (3, 5) that is perpendicular to the line passing through (3, 3) and (-3, -1).