

## Parallel and Perpendicular Lines

**Parallel Slopes (||)**- Have the same slope as the original slope

**Perpendicular Slopes ( $\perp$ )**- Have opposite reciprocal slopes as the original slope

Original Slope	Parallel Slope	Perpendicular
Slope 5		
-6		
$\frac{1}{2}$		
$-\frac{4}{3}$		
no slope		
0		

Find the parallel and perpendicular slope for the following

1.  $x + 2y = 8$

2.  $x = 6$

3.  $y = 5 - 3x$

$m =$  \_\_\_\_\_

$m =$  \_\_\_\_\_

$m =$  \_\_\_\_\_

$\parallel m =$  \_\_\_\_\_

$\parallel m =$  \_\_\_\_\_

$\parallel m =$  \_\_\_\_\_

$\perp m =$  \_\_\_\_\_

$\perp m =$  \_\_\_\_\_

$\perp m =$  \_\_\_\_\_

Write an equation in slope intercept form for the following

1. passes through (4, -2) **parallel** to  $2y - x = -7$

$$m = \underline{\hspace{2cm}}$$

$$\parallel m = \underline{\hspace{2cm}}$$

$$\perp m = \underline{\hspace{2cm}}$$

2. passes through (-3, -2) **perpendicular** to  $x + 4y = 12$

$$m = \underline{\hspace{2cm}}$$

$$\parallel m = \underline{\hspace{2cm}}$$

$$\perp m = \underline{\hspace{2cm}}$$

3. Write an equation of a line that is **parallel** to a line that passes through (1, 2) and has slope 3

$$m = \underline{\hspace{2cm}}$$

$$\parallel m = \underline{\hspace{2cm}}$$

$$\perp m = \underline{\hspace{2cm}}$$

4. Write an equation of a line that is **perpendicular** to a line that passes through (-4, -3) and has slope  $\frac{1}{2}$

$$m = \underline{\hspace{2cm}}$$

$$\parallel m = \underline{\hspace{2cm}}$$

$$\perp m = \underline{\hspace{2cm}}$$

4. Write an equation of a line that is **perpendicular** to a line that passes through  $(-3, 2)$  and  $(4, 1)$  and passes through the point  $(-1, 3)$ .

$$m = \underline{\hspace{2cm}}$$

$$\parallel m = \underline{\hspace{2cm}}$$

$$\perp m = \underline{\hspace{2cm}}$$

