Lines: Lesson 7

Parallel and Perpendicular Lines: Notes

Name: _____

Parallel Lines:

same _____

different _____

Perpendicular Lines:

Slopes: opposite reciprocals

_____ _____ and _____ _____

Examples:

Slope 3 $\longrightarrow$ $\perp$ Slope: _____

Slope $\frac{-7}{5}$ $\longrightarrow$ $\perp$ Slope: _____

To determine if lines are parallel, perpendicular, or neither:

- Turn each equation into _____
- Compare their _____
  - same = _____
  - opposite reciprocals = _____
  - none of the above = _____

Are these lines parallel, perpendicular, or neither?

$3y = x + 21$ and $3x + y = -2$

Slopes: _____ and _____

The lines are _____

Are these lines parallel, perpendicular, or neither?

$y=2x-10$ and $y=\frac{1}{2}x-10$

Slopes: _____ and _____

These lines are _____

Find the equation of the line parallel to $4x-y=3$ and through (-2, 1):

1. Turn into $y=mx+b$ $4x-y=3$
2. Get slope: $m=$_____
3. Put into Point-Slope form $y-y_1=m(x-x_1)$
4. Make it pretty!

Find the equation of the line perpendicular to the line through (-4, 3) and (-3, 1) that goes through (2, 5):

1. Find slope: $m=$_____
2. Get the slope we need: $\perp$ Slope: _____
3. Put m, x, and y into $y=mx+b$ and solve for b.
4. Make it pretty!