M10 - 7.5 - Parallel $m = m$/Perpendicular $m = -\dfrac{1}{m}$ Lines Notes
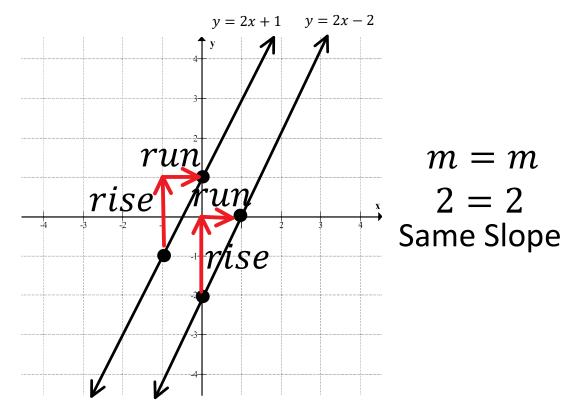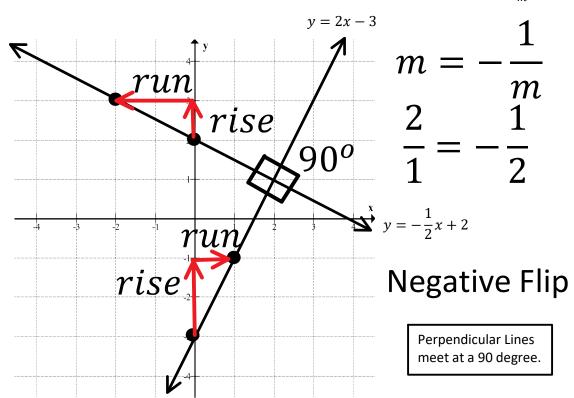
Parallel Lines: lines which never cross. Lines with the **Same Slope**. $m = m$

$y = 2x + 1$ $y = 2x - 2$

run

rise   *run*

rise

$m = m$

$2 = 2$

Same Slope

Notice: the graph of $y = 2x - 2$ and $y = 2x + 1$ are parallel because they have the same slope.

Perpendicular Lines: two lines which have **Negative Reciprocal** slopes and meet at 90°. $m = -\dfrac{1}{m}$

$y = 2x - 3$

run

rise

90°

run

rise

$m = -\dfrac{1}{m}$

$\dfrac{2}{1} = -\dfrac{1}{2}$

$y = -\dfrac{1}{2}x + 2$

Negative Flip

Perpendicular Lines meet at a 90 degree.

Notice: The slope of the one line is the negative reciprocal of the slope of the other.