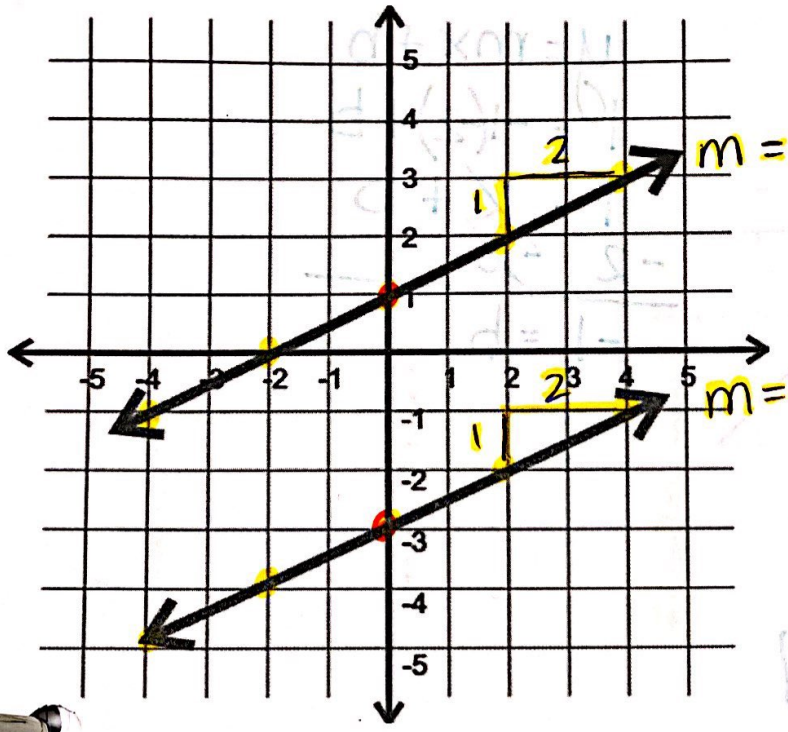
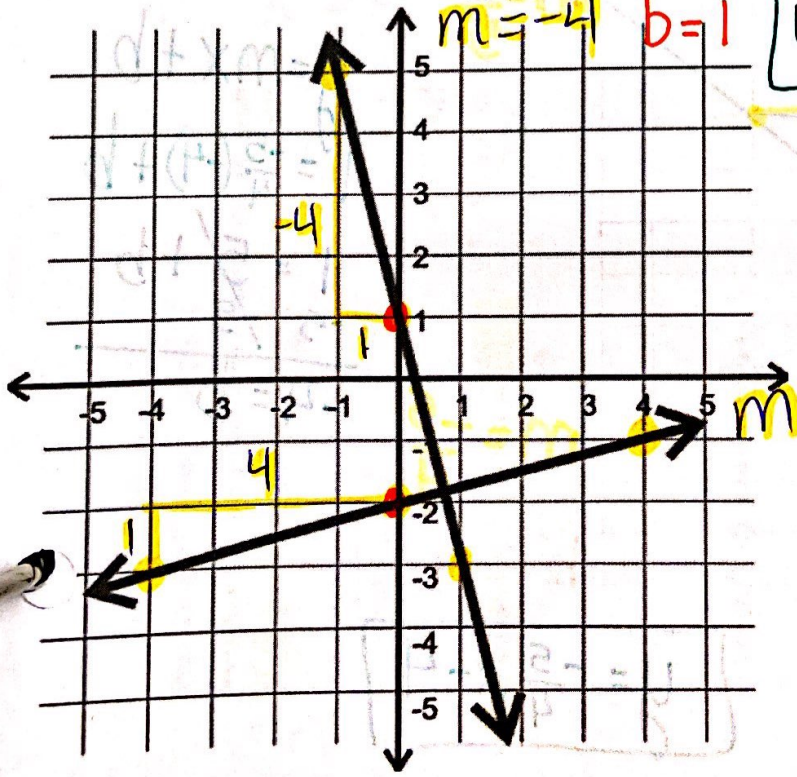
Parallel and Perpendicular Lines NOTES

Parallel Lines have the same slopes.

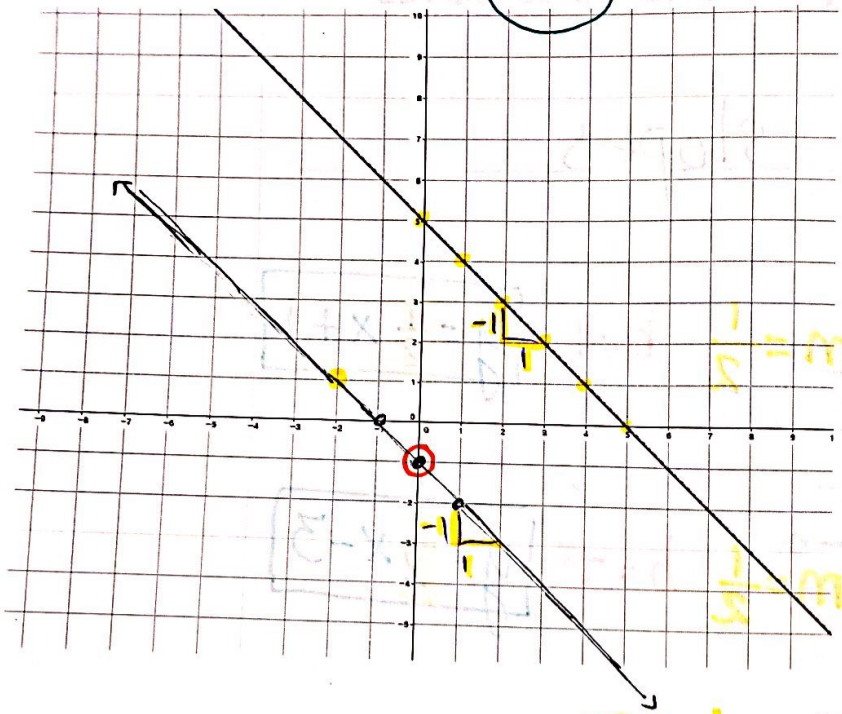


Perpendicular Lines have opposite and reciprocal slopes.



Ex) Write the equation of the line that is **parallel** to the graphed line and passes through the point **(-2, 1).**

x y



$y = mx + b$

$1 = -1(-2) + b$

$1 = 2 + b$

$-2 \quad -2$

$-1 = b$

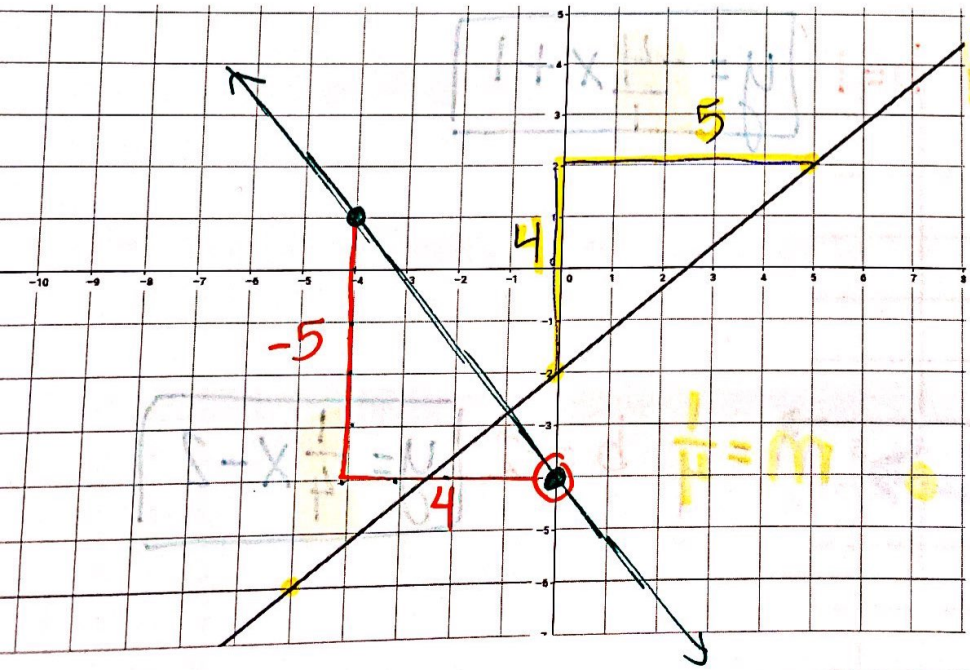
$m = -1$

$b = -1$

$y = -1x - 1$

x) Write the equation of the line that is **perpendicular** to the graphed line and passes through the point **(-4, 1).**

x y



$m = \frac{4}{5}$

$y = mx + b$

$1 = \frac{-5}{4}(-4) + b$

$1 = 5 + b$

$-5 \quad -5$

$-4 = b$

$m = \frac{-5}{4}$

$b = -4$

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