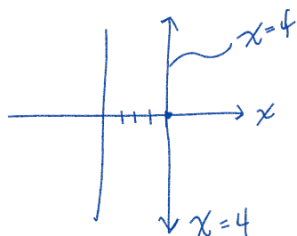Pre-Algebra
Linear Function
Example 2

Identify if the equation will produce a horizontal or vertical line, then graph the function:
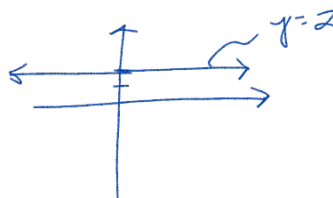
1. $x = 4$

VERTICAL

$x = 4$

$x = 4$

2. $y = 2$

HORIZONTAL

$y = 2$

Identify the slope in the following equations:

1. $y = 5x - 6$

$m = 5$

2. $y = 4 - x$

$m = -1$

3. $3y - 9x = 18$
$+9x \qquad +9x$
_____
$\dfrac{3y}{3} = \dfrac{9x}{3} + \dfrac{18}{3}$

$y = 3x + 6$

$m = 3$

Find the intercepts for the following and graph:

1. $y = 4 - 4x$

x-int: $y = 0$
$0 = 4 - 4x$
$+4x \qquad +4x$
_____
$4x = 4$
$x = 1$
$\therefore$ x-int $(1, 0)$

y-int: $x = 0$
$y = 4 - 4(0)$
$y = 4$
$\therefore$ y-int $(0, 4)$

2. $y = x + 1$

x-int: $y = 0$
$0 = x + 1$
$-1 \qquad -1$
$-1 = x$
$\therefore$ x-int $(-1, 0)$

y-int: $x = 0$
$y = 0 + 1$
$y = 1$
$\therefore$ y-int $(0, 1)$

3. $3y - 3x = 6$

x-int: $y = 0$
$3(0) - 3x = 6$
$-3x = 6$
$\dfrac{-3x}{-3} = \dfrac{6}{-3}$
$x = -2$
$\therefore$ x-int $(-2, 0)$

y-int: $x = 0$
$3y - 3(0) = 6$
$\dfrac{3y}{3} = \dfrac{6}{3}$
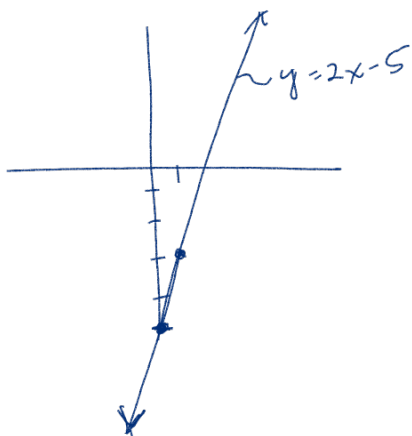$y = 2$
$\therefore$ y-int $(0, 2)$

$y = x+1$

$y = 4-4x$

$3y - 3x = 6$
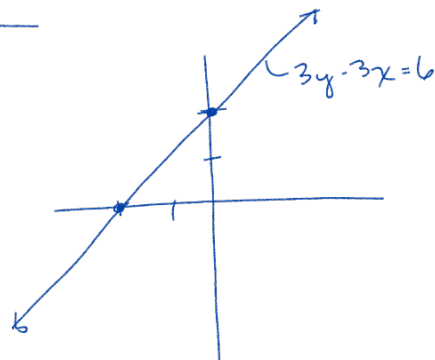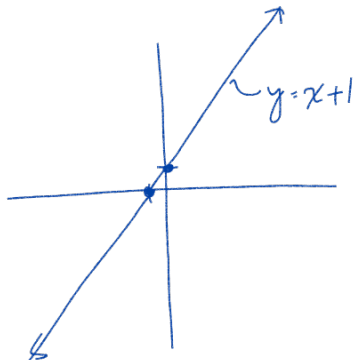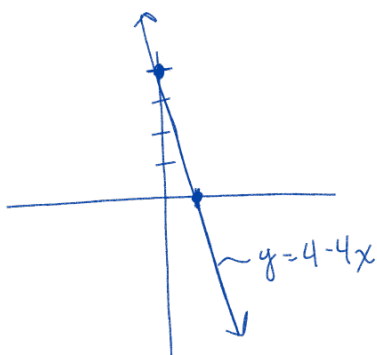
Write the following equations in slope-intercept form and graph using the slope and intercept:

1. $20y - 40x = 100$

$+40x +40x$

$$\frac{20y}{20} = \frac{40x}{20} - \frac{100}{20}$$

$y = 2x - 5$

$M = 2$

Int. $= (0, -5)$

$y = 2x - 5$

2. $9y + 27x = 36$

$-27x -27x$

$$\frac{9y}{9} = \frac{36}{9} - \frac{27x}{9}$$

$y = 4 - 3x$

$m = -3$

Int. $= (0, 4)$

$y = 4 - 3x$