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$y = mx + b$ (m: slope, b: y-intercept)

4a) $y = 4x - 7$ ($y = mx + b$)

$m = 4$

$b = -7$

b) $y = x + 12$ (no number in front implies there is a 1 there)

$y = 1x + 12$

$m = 1$

$b = 12$

4c) $y = \frac{-4}{9}x + 7$

$m = \frac{-4}{9}$

$b = 7$

5) a) slope is 7 ($m = 7$), y-intercept 16 ($b = +16$)

$y = mx + b$

$y = 7x + 16$

c) passes through $H(0, -3)$, slope $\frac{7}{16}$ ($m = \frac{7}{16}$)

y-intercept (because $x = 0$)

$b = -3$

$y = mx + b$

$y = \frac{7}{16}x - 3$

e) passes through origin $(0,0)$ has slope $\frac{-5}{12}$ ($m = \frac{-5}{12}$)

$(0,0)$ y-intercept $b = 0$

$y = mx + b$

$y = \frac{-5}{12}x + 0$

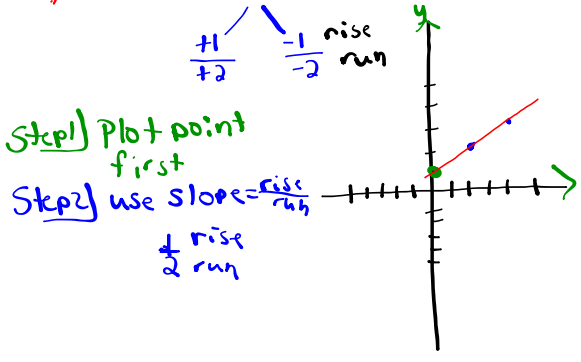
$y = \frac{-5}{12}x$

6) Slope $= \frac{1}{2}$ ($\frac{+1}{+2}$ rise, $\frac{-1}{-2}$ run)

y-intercept $= +1$ ↓ point (x, y) $(0, 1)$

Step 1) Plot point first

Step 2) use slope $= \frac{\text{rise}}{\text{run}}$ $\frac{1}{2}$ rise run



7) a) $y = 2x - 7$

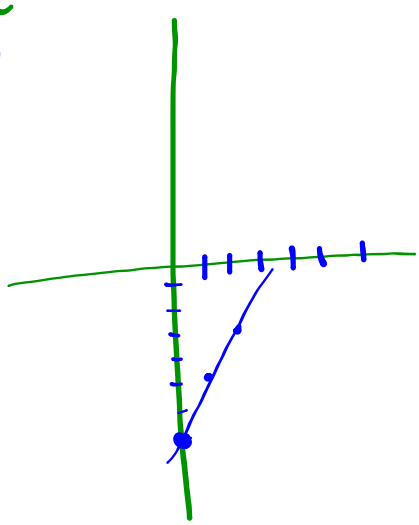
$y = mx + b$

plot first

$m = \frac{2}{1}$ rise / run

$b = -7$

$\frac{-2}{-1}$ $\frac{+2}{+1}$



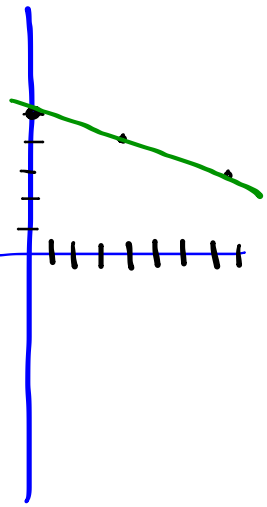
7c) $y = -\frac{1}{4}x + 5$

$b = 5$

$m = \frac{-1}{4}$ $\frac{\text{rise}}{\text{run}}$

down -1 / right $+4$

$+1$ up / -4 left



$$\text{Slope} = \frac{\text{rise}}{\text{run}}$$

$$\frac{y_2 - y_1}{x_2 - x_1}$$