Summary of Lines

1 $y = mx + b$ m is the slope   note: for $y = x + 2$

  b is the y-intercept' m is 1 $b = 2$

  for $y = x$

  $m = 1$ $b = 0$

2 if slope is -2 then $\boxed{y = -2x + 10}$

  and y-int is 10

3 $A(0, -4)$ $B(2, 2)$

  $m = \dfrac{2 - (-4)}{2 - 0} = \dfrac{6}{2} = 3$ $\boxed{y = 3x - 4}$

  $(0, -4)$ is the y-intercept.

4 $y = 2x - 3$ let $y = 0$ by definition

  of x-intercept

  $0 = 2x - 3$

  $3 = 2x$

  $\dfrac{3}{2} = x$ so $x = \dfrac{3}{2}$ when $y = 0$

  $\boxed{\left(\dfrac{3}{2}, 0\right)}$

5

  $A(2, -3)$ $B(-1, -2)$

  $m = \dfrac{-3 - (-2)}{2 - (-1)} = \dfrac{-3 + 2}{2 + 1} = \dfrac{-1}{3}$

  $y = -\dfrac{1}{3} x + b$ need   to find b.

  use $(2, -3)$

  $-3 = -\dfrac{1}{3}(2) + b$

  $-3 = -\dfrac{2}{3} + b$

$-5 = \frac{}{3} + b$

$-3 + \frac{2}{3} = b$

$-\frac{9}{3} + \frac{2}{3} = b$

$-\frac{7}{3} = b$

$$\boxed{y = -\frac{1}{3}x - \frac{7}{3}}$$

6 $x + 2y = 2$

$2y = -x + 2$

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

$$\boxed{\begin{array}{c} m = -\frac{1}{2} \\ (0, 1) \end{array}}$$

7 $2x - 3y = 6$

let $x = 0$

$2(0) - 3y = 6$

$y = -2$

$$\boxed{(0, -2)}\ \text{y-int}$$

let $y = 0$

$2x - 3(0) = 6$

$2x = 6$

$x = 3$

$$\boxed{(3, 0)}\ \text{x-int}$$

$2x = 3y + 6$

$2x - 6 = 3y$

$$\boxed{\frac{2}{3}x - 2 = y}$$

8 $\frac{\Delta y}{\Delta x} = \frac{3}{1} = \frac{6 - 2}{x - 2}$
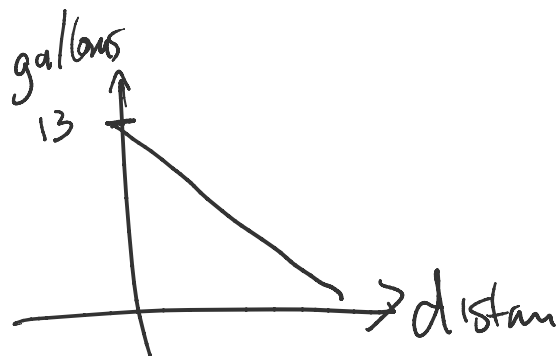
$\frac{3}{1} = \frac{4}{x - 2}$

$3(x - 2) = 4$

$3x - 6 = 4$

$3x = 10$

$$\boxed{x = \frac{10}{3}}$$

9

gallons

13

 distan

$G = 13 - 0.05 D$

$0 = 13 - 0.05 D$

$D = \dfrac{13}{0.05} = 260$

a full tank of gas
can get your car
260 miles