Pg 87 #12 a) $y = 4x - 2$

pt. $(-3, 3)$

Slope: $m = \frac{-1}{4}$

$x \quad y$

$(-3, 3)$ is on the line

$y = mx + b$

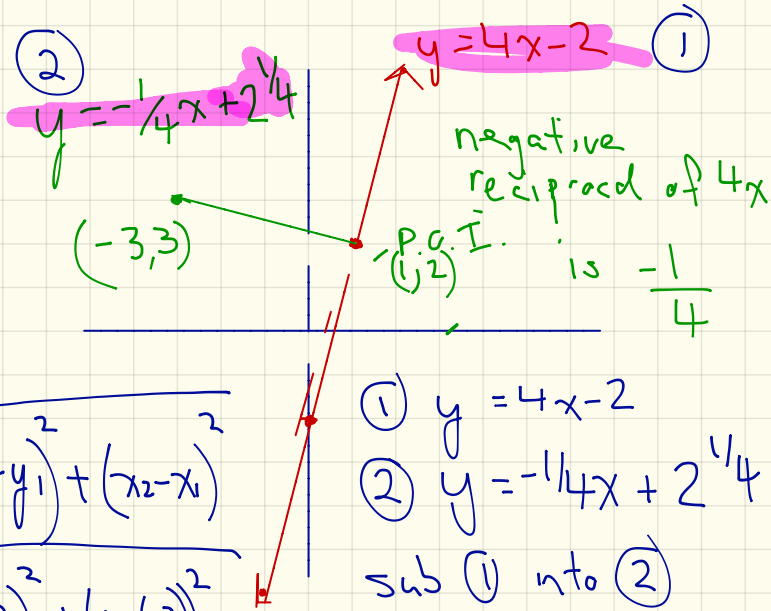
$3 = -\frac{1}{4}(-3) + b$

$3 = \frac{3}{4} + b$

$3 - \frac{3}{4} = b$

$2\frac{1}{4} = b$

$\therefore y = -\frac{1}{4}x + 2\frac{1}{4}$



$$d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$$

$$d = \sqrt{(2-3)^2 + (1-(-3))^2}$$

$$d = \sqrt{(-1)^2 + (4)^2}$$

$$d = \sqrt{1 + 16}$$

$$d = \sqrt{17}$$

$$d \doteq 4.1$$

P.O.I $(1, 2)$

① $y = 4x - 2$

② $y = -\frac{1}{4}x + 2\frac{1}{4}$

sub ① into ②

$$4x - 2 = -\frac{1}{4}x + 2\frac{1}{4}$$

$$4x + \frac{1}{4}x = 2\frac{1}{4} + 2$$

$$4\frac{1}{4}x = 4\frac{1}{4}$$

$$x = 1$$

$$y = 4x - 2$$

$$y = 4(1) - 2$$

$$y = 4 - 2$$

$$y = 2$$

Procedure to determine dist. btw. a point and a line.

1. Use negative reciprocal of given line to determine slope of the perpendicular line.
2. Use the slope found in 1 and given pt. to determine the equation of perpendicular line.
3. Det. the P.O.I. of 2 lines
4. Use the P.O.I. and given pt. to determine the distance.

HW/ pg. 87 #12 c,d.