SYSTEMS OF LINEAR EQUATIONS AND GRAPHS

RECALL: $y = mx + b$ (SLOPE - INTERCEPT Form)

slope $\nearrow$ $\nwarrow$ y - INTERCEPT

$Ax + By + C = 0$ GENERAL FORM

— SYSTEM OF LINEAR EQUATIONS — TWO OR MORE LINEAR EQUATION INVOLVING COMMON VARIABLES

— THE SOLUTION TO A SYSTEM OF LINEAR EQUATIONS IS:

① THE POINT OF INTERSECTION OF THE GRAPHS

② AN ORDERED PAIR THAT SATISFIES BOTH EQUATIONS.

$$(x, y)$$ IE. $$(3, 2)$$

③ A PAIR OF VALUES THAT OCCUR IN BOTH

TABLE OF VALUES.

Ⅱ GRAPH $$3x + 4y - 2 = 0$$

$$\frac{-4y}{-4y}$$

$$\frac{-4y}{-4y}$$

Solⁿ

$$3x - 2 = -4y$$

$$y = \frac{x}{3} + \frac{2}{1}$$

$$4y = 3x - 2$$

$$\frac{-4}{-4} \quad \frac{-4}{-4}$$

$$y = \frac{3x}{4} - \frac{2}{4}$$

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SOLVE A) $6x + 2y = 22$ B) $2x - 4y = 12$

Solve

$$6x + 2y = 22$$
$$-6x \qquad -6x$$
$$\frac{2y}{2} = \frac{-6x}{2} + \frac{22}{2}$$
$$y = -3x + 11$$

$$2x - 4y = 12$$
$$-2x \qquad -2x$$
$$\frac{-4y}{-4} = \frac{-2x}{-4} + \frac{12}{-4}$$
$$y = \frac{1}{2}x - 3$$

$(4, -1)$
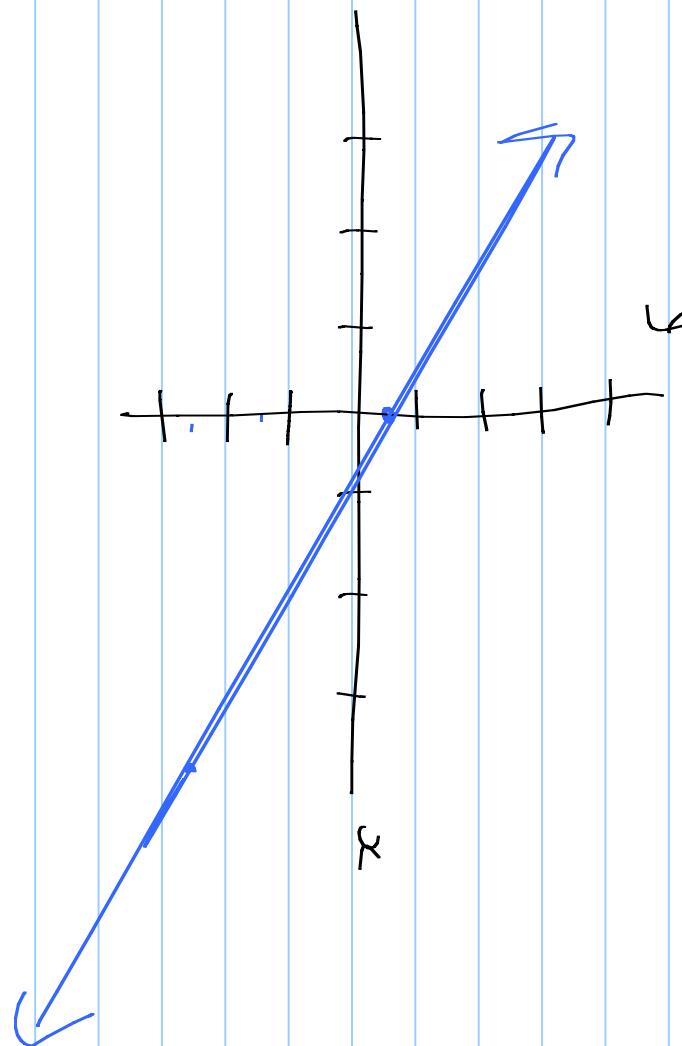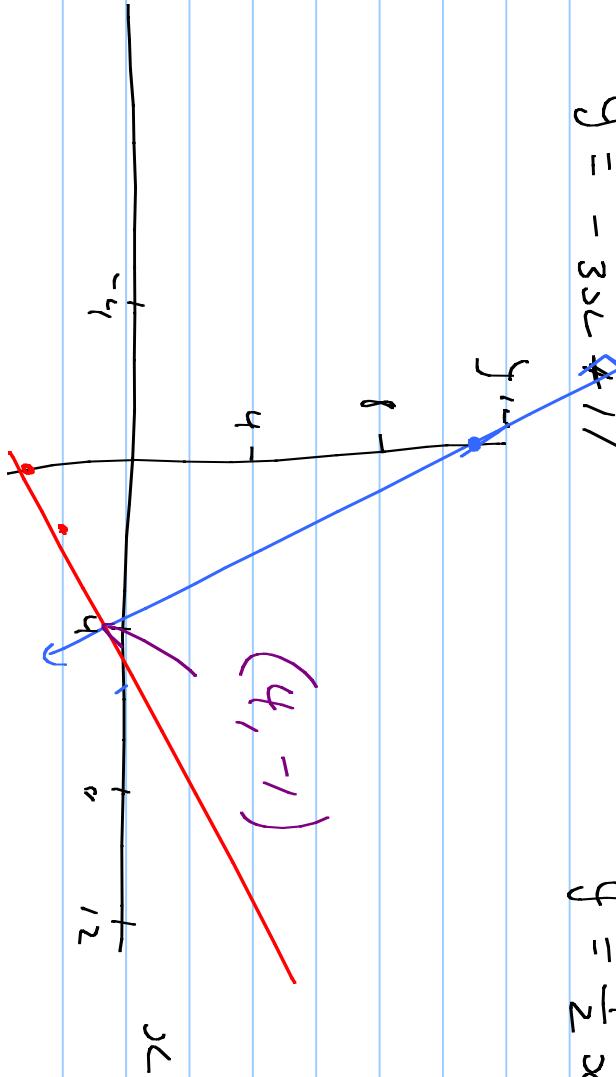
VERIFY $(4, -1)$

$6x + 2y = 22$ $2x - 4y = 12$

$6(4) + 2(-1) = 22$ $2(4) - 4(-1) = 12$

$24 - 2 = 22$ $8 + 4 = 12$

$22 = 22$ ✓ $12 = 12$ ✓

H/w fl 427 # $2, 5 - 7, 10, 11, 15$