Warm up

1. Solve the system of equations.

$$x^2 - y = 4$$
$$x - y = 2$$

$$x = y + 2$$

$(y+2)^2 - y = 4$

$y^2 + 4y + 4 - y = 4$

$y^2 + 3y = 0$

$y(y+3) = 0$

$y = 0, -3$

$(2, 0)$

$(-1, -3)$

2. A small business invest \$20,000 to develop a new game that will sell for \$34.95. The game costs \$12.95 to produce. How many games must the business sell in order to begin making a profit?

$C = 12.95x + 20,000$

$R = 34.95x$ 910

$12.95x + 20000 = 34.95x$

$20000 = 22x$

$x = 909.09$

3. You plan to invest your savings of \$1200 into a bonds account that earns 6.5% and a stocks account that has a 4% return. You want to make \$50 in interest for the year. How much should you invest in each account?

$x + y = 1200$ $x = 1200 - y$

$.065x + .04y = 50$

$.065(1200 - y) + .04y = 50$

$78 - .065y + .04y = 50$

$-.025y = -28$

$y = 1120$

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GO COUGARS!

Homework Questions

(23)

$$x^2 - 2x + y = 8$$

$$x - y = -2$$

$$x = -2 + y$$

$$(-2+y)^2 - 2(-2+y) + y = 8$$

7.2 Systems of Linear Equations in Two Variables

Solve a system of equations using elimination

Example 1 $2\left(4x - 2y = -16\right)$

$$-3x + 4y = 12$$

$+\quad 8x - 4y = -32$

$$5x = -20$$

$$x = -4$$

$$-3(-4) + 4y = 12$$

$$12 + 4y = 12$$

$$\frac{4y}{4} = \frac{0}{4}$$

$$y = 0$$

$$(-4, 0)$$

Example 2 $4\left(7x + 5y = -12\right)$
           $5\left(3x - 4y = 1\right)$

$$28x + 20y = -48$$

$$15x - 20y = 5$$

$$43x = -43$$

$$\frac{33}{29}$$ $\frac{1}{3}$ $x = -1$

Example 3
$$\frac{2}{x} - \frac{1}{y} = 0$$
$$\frac{4}{x} - \frac{3}{y} = -1$$

let $\frac{1}{x} = X$

let $\frac{1}{y} = Y$

$-2(2X - Y = 0)$

$4X - 3Y = -1$

$-4X + 2Y = 0$

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

$\boxed{X = 2}$

$\frac{1}{y} = 1$

$\boxed{Y = 1}$

$4X - 3(1) = -1$

$4X = 2$

$X = \frac{1}{2}$

$-y = -1$

$\boxed{y = 1}$

$(2,1)$

HOMEWORK

p 491   5, 7-11 odd, 15, 23,

37-41 odd (algebraically),

55, 57, 73-77 odd