Warm up

1. What does it mean to solve a system of equations?
2. Solve using the method of substitution:

a. $x+2y=-1$
$5x+4y=-23$

$x=-1-2y$

$5(-1-2y)+4y=-23$

$-5-10y+4y=-23$

$-6y=-18$

$y=3$

$x=-1-2(3)$

$x=-7$

$(-7,3)$

b. $-\frac{2}{3}x+y=2$
$2x-3y=6$

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

$2x-3\left(\frac{2}{3}x+2\right)=6$

$2x-2x-6=6$

$-6\neq 6$

No Solution

c. $3x+4y=12$

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

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

$3x+4\left(-\frac{3}{4}x+3\right)=12$

$3x-3x+12=12$

$12=12$

∞ many

7.1 Solving Systems of Equations

linear systems
non-linear systems
applications

1. $x - y^2 = -2$

$x - 2y = 6$ $x = 2y + 6$

$2y + 6 - y^2 = -2$

$0 = y^2 - 2y - 8$

$0 = (y-4)(y+2)$

$y - 4 = 0$ $y + 2 = 0$

$y = 4$ $y = -2$

$x = 2(4) + 6$

$x = 14$

$x = 2(-2) + 6$

$x = 2$

$(14, 4)$ $(2, -2)$

2. $x^2 + y^2 = 1$

$2x - 1 = y$

$x^2 + (2x-1)^2 = 1$

$x^2 + 4x^2 - 4x + 1 = 1$

$5x^2 - 4x = 0$

$x(5x - 4) = 0$

$x = 0$ $5x - 4 = 0$

$x = \frac{4}{5}$

Plug in to find y

3. A total of $25,000 is invested in two accounts paying 7% and 4% simple interest. The yearly interest income is $1405. How much is invested in each account?

let x = $ in account 1

let y = $ in account 2

$$x + y = 25{,}000$$

$$.07x + .04y = 1405$$

4. Break Even Analysis

A small business has an initial investment of $6000. The unit cost of the product is $23.20 and the selling price is $35.20. How many units must be sold to break even?

HOMEWORK

p 481 1, 7, 13-17 odd, 21-35 odd,

57 (algebraically), 60-65,

71-75 all

DUE 9-8-17 (NEXT FRIDAY)

Additional Review

p 83 3, 5, 9-47 odd (omit 33, 45)

53, 61-69 odd, 73-75 all,

85-88 all, 89-109 odd, 119-126 all

129-133 all, 139, 140

p 71 80-88 even

Workbook p 7 (factoring practice)