Pre-Calculus CP 1 – Section 7.1 & 7.2 Notes **Name:** _____
Solving Systems of Equations

Warm Up: Solve the system of equations.

a) $x - y = -4$
$x + 2y = 5$

b) $6x - 3y - 4 = 0$
$x + 2y - 4 = 0$

Examples

Two Solution Case

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

b) $x^2 + y = 0$
$x^2 - 4x - y = 0$

No Real Solution Case

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

$2x-3y=6$

b) $x+y=4$

$x^2+y=2$

Applications

A total of $20,000 is invested in two funds paying 6.5% and 8.5% simple interest. The investor wants a yearly interest check of $1600 from the two investments. Write and solve a system of equations to determine how much is invested at each interest rate.

A small fast-food restaurant invests $5,000 to produce a new food item that will sell for $3.49. Each item can be produced for $2.16.

a) How many units must be sold to break even?
b) How many units must be sold to make a profit of $8500?

The perimeter of a rectangle is 280 cm and the width is 20 cm less than the length. Find the dimensions of the rectangle.

Homework: p. 503, #7, 10, 23, 35, 49, 63
p. 516, #49