

Name:

Date:

Period:

Master Problem Set R2

1. Solve the following systems algebraically

a)

$$y = 5x^2 - 5x + 3$$

$$y = 2x + 9$$

b)

$$y = -x^2 - 3x + 41$$

$$y = -3x - 8$$

c)

$$(x + 2)^2 + y^2 = 40$$

$$x - y = 2$$

d)

$$x^2 + (y - 1)^2 = 97$$

$$-x + y = 6$$

e)

$$(x + 5)^2 + y^2 = 13$$

$$x - 3y = -2$$

2. Solve the following systems graphically (round all decimals to nearest tenth):

a)

$$y = 3x^2 + 6x - 6$$

$$y = 2x + 1$$

b)

$$y = x^2 - 7x - 36$$

$$3x + y = 9$$

c)

$$y = x^3 - 5x^2 + 6x - 1$$

$$y = 2x - 4$$

d)

$$y = |x| + 2^x$$

$$y = \sqrt{x + 6} + 3$$

e)

$$y = x^4 - \frac{13}{2}x^3 - \frac{9}{4}x$$

$$y = 2x + 5$$

3. Solve the following system algebraically:

a)

$$9x + 9y - 8z = 10$$

$$3x + 4y - 3z = 9$$

$$9x + 6y + 2z = 2$$

b)

$$-2x - 5y + 3z = 10$$

$$x + 9y + 5z = -5$$

$$4x - y - 8z = 7$$

c)

$$8x + 2y + 9z = -6$$

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

$$-4x + 3y - 8z = -8$$

d)

$$7x + 4y + 9z = -5$$

$$4x + 5y - 9z = -4$$

$$4x + 6y - 9z = 6$$

e)

A candy store sells three different packages of candy: Packages of lollipops, gum, and chocolate. Sarai comes in and purchases 9 packages of lollipops, 3 packages of gum, and 4 packages of chocolate and her total is \$53. Benji purchases 9 packages of lollipops, 6 packages of gum, and 5 packages of chocolate and spends \$64. Giselle buys three packages of lollipops, 5 packages of gum, and 2 packages of chocolate and her total is \$31. Find the total cost of each package of candy.

f)

The height, h , of a baseball, in metres, at time t seconds after it is tossed out of a window is modelled by $h = -5t^2 + 20t + 15$. A boy shoots at the baseball with a paintball gun. The trajectory of the paintball is given by the equation $h = 3t + 3$. Will the paintball hit the baseball? If so, when? At what height will the baseball be?

g)

A sporting goods store sells footballs, basketballs, and volleyballs. A football costs \$35, a basketball costs \$25, and a volleyball costs \$15. On a given day, the store sold 5 times as many footballs as volleyballs. They brought in a total of \$3750 that day, and the money made from basketballs alone was 4 times the money made from volleyballs alone. How many footballs, basketballs, and volleyballs were sold? Just set up the problem.