Page 1
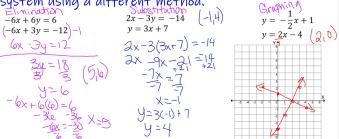
Choose a method (graphing, substitution, or elimination) to solve each system of equations. You must solve each system using a different method.

Elimination
$$-6x + 6y = 6$$
$$(-6x + 3y = -12) \cdot -1$$

$$6x - 3y = 12$$

$$\frac{3y}{3} = \frac{18}{3} \quad (5,6)$$
$$y = 6$$
$$-6x + 6(6) = 6$$
$$-36 \quad -36 \quad x = 5$$
$$\frac{-6x}{-6} = \frac{-30}{-6}$$

Substitution
$$2x - 3y = -14 \quad (-1,4)$$
$$y = 3x + 7$$

$$2x - 3(3x + 7) = -14$$
$$2x - 9x - 21 = -14$$
$$ +21 \quad +21$$
$$\frac{-7x}{-7} = \frac{7}{-7}$$
$$x = -1$$
$$y = 3(-1) + 7$$
$$y = 4$$

Graphing
$$y = -\frac{1}{2}x + 1$$
$$y = 2x - 4 \quad (2,0)$$

Page 2

The perimeter of a rectangle is 60 feet. The length is twice the width.

Write a system of linear equations to represent the situation. Solve your system to find the dimensions of the rectangle.

$l = $ length
$w = $ width

$$2l + 2w = 60$$
$$l = 2w$$

$$2(2w) + 2w = 60$$
$$\frac{6w}{6} = \frac{60}{6}$$
$$w = 10 ft \quad l = 20 ft$$

Page 3

A bank teller is counting $20 bills & $10 bills. There are 16 bills that total $200.

Write a system of linear equations to represent the situation. Solve your system to find the number of each denomination of bill.

$x = \$20$ bills
$y = \$10$ bills

$$x + y = 16$$
$$20x + 10y = 200$$

4 $20 bills
12 $10 bills

$$-10x - 10y = -160$$
$$\frac{10x}{10} = \frac{40}{10}$$
$$x = 4$$

Page 4

The perimeter of a rectangle is 42 cm. The length is 1 more than 3 times the width.

Write a system of linear equations to represent the situation. Solve your system to find the dimensions of the rectangle.

$l = $ length
$w = $ width

$$2l + 2w = 42$$
$$l = 1 + 3w$$

Page 5

The sum of two numbers is 35. The second number is 4 times the first number.

Write a system of linear equations to represent the situation. Solve your system to find the value of each number.

$x = 1^{st}$ #
$y = 2^{nd}$ #

$$x + y = 35$$
$$y = 4x$$

Page 6

The sum of two numbers is 20. The second number is 3 times the first number.

Write a system of linear equations to represent the situation. Solve your system to find the value of each number.

$x = 1^{st}$ #
$y = 2^{nd}$ #

$$x + y = 20$$
$$y = 3x$$

A store sold 28 pairs of shoes for a total of $2220. Style A are $70 per pair and stlye B are $90 per pair. Write a system of linear equations to represent the situation. Solve your system to find how many of each style were sold.

$A = $ style A

$B = $ styleB

$A + B = 28$

$70A + 90B = 2220$

Page 7

Your car's manual recommends that you use at least 89-octane gasoline in your 16 gallon tank. Regular gasoline is 87-octane & premium gasoline is 92-octane. Write a system of linear equations to represent the situation. Solve your system to find how many gallons of regular gasoline & premium gasoline you need to mix to produce 16 gallons of 89-octane.

$r = $ regular

$p = $ premium

$r + p = 16$

$87r + 92p = 89 \cdot 16$

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Example 2:

$t = $ trips to gym

$c = $ total cost

$20 + 2t = c$

$4t = c$

$20 + 2t = 4t$

$ -2t \quad -2t$

$\dfrac{20}{2} = \dfrac{2t}{2}$

$c = \$40 \qquad t = 10 \text{ trips}$

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