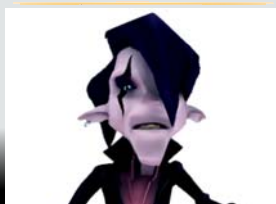


MasterMath

ALGEBRA

Writing Systems of Linear Equations



There are a total of 7 bills. They are all either \$5 or \$10.

x = number of \$5; y = number of \$10

$$x + y = 7$$

There is a total of \$50

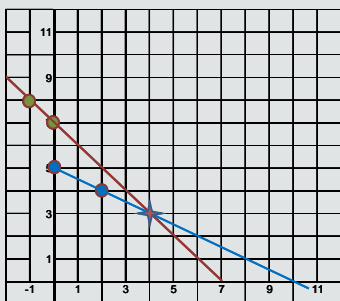
$$5x + 10y = 50$$

$$5x + 10y = 50$$

Writing Systems of Linear Equations



$x + y = 7$ $4 + 3 = 7$ $5 \cdot 4 + 10 \cdot 3 = 50$ $5x + 10y = 50$
 $y = 7 - x$ $10y = 50 - 5x$
 $y = -x + 7$ $y = 5 - .5x$
 $y = -.5x + 5$



Writing Systems of Linear Equations



$$y = -x + 7$$

$$y = -1.5x + 5$$

$$-x + 7 = -1.5x + 5$$

$$7 = x - .5x + 5$$

$$7 - 5 = .5x$$

$$2 = .5x$$

$$4 = x$$

$$x + y = 7$$

$$y = 7 - x$$


$$y = -x + 7$$

$$5x + 10y = 50$$

$$10y = 50 - 5x$$


$$y = 5 - .5x$$

$$y = -1.5x + 5$$

Writing Systems of Linear Equations 

You try it!

Your town has two concerts each month: one a rock concert, and the other a country music concert. Last month there were 125 people that attended the rock concert, and only 95 people at the country concert. However, the rock concert's attendance has been decreasing by an average of 5 people per month, and the country concert attendance has been increasing by an average of 4 people per month. If this keeps up, how long will it be before the same number of people attend both concerts?

Writing Systems of Linear Equations 

You try it!

Your town has two concerts each month: one a rock concert, and the other a country music concert. Last month there were 125 people that attended the rock concert (r), and only 95 people at the country concert (c). However, the rock concert's attendance has been decreasing by an average of 5 people per month, and the country concert attendance has been increasing by an average of 4 people per month. If this keeps up, how long will it be before the same number of people attend both concerts (m)?

$$r = c$$


$$r = 125 - 5m \qquad c = 95 + 4m$$

$$125 - 5m = 95 + 4m$$

$$125 - 95 = 4m + 5m$$

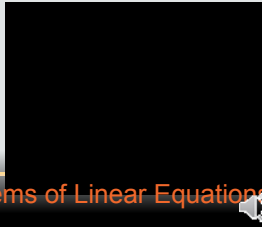
$$30 = 9m$$

$$3.33 = m$$

Writing Systems of Linear Equations 

You try it!

There are 36 members of the team fan club. The number of boys is twice the number of girls. How many boys and how many girls are fan club members?



Writing Systems of Linear Equations

You try it!

There are 36 members of the team fan club. The number of boys is twice the number of girls. How many boys (b) and how many girls (g) are fan club members?

$$b + g = 36$$

$$2g + g = 36$$

$$3g = 36$$

$$g = 12$$

$$b + g = 36$$

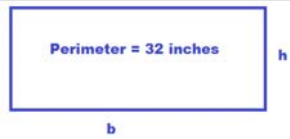
$$b + 12 = 36$$

$$b = 36 - 12 = 24$$

Writing Systems of Linear Equations

You try it!

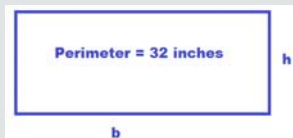
The base is three times as long as the height. What is the length of the base?



Writing Systems of Linear Equations

You try it!

The base is three times as long as the height. What is the length of the base?



$$\begin{array}{lll} b = 3h & 2(3h) + 2h = 32 & 2b + 2h = 32 \\ b = 3 \times 4 & 6h + 2h = 32 & \\ b = 12 & 8h = 32 & \\ & h = 4 & \end{array}$$

Writing Systems of Linear Equations 

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