Warm Up

If you have the following system of equations, what variable will be the easiest to eliminate?

$$\begin{cases} 3x - 5y = 14 \\ 2x + 5y = 25 \end{cases}$$

What operation would you use? Addition

Why do we want to eliminate a variable?

$3x - 5y = 14$
$+\ 2x + 5y = 25$

$5x = \frac{39}{5}$

$x = \frac{39}{5}$

$\left(\frac{39}{5}, -10.6\right)$

$2x + 5y = 25$

$2\left(\frac{39}{5}\right) + 5y = 25$

$5\left[\frac{78}{5} + 5y = 25\right]$

$78 + 25y = 125$

$-78 \quad -78$

$\frac{25y}{25} = \frac{47}{25}$

$y = \frac{47}{25}$

$3x - 5y = 14$

$3\left(\frac{39}{5}\right) - 5\left(\frac{47}{25}\right) = 14$

$5\left[\frac{117}{5} - \frac{47}{5} = 14\right]$

$117 - 47 = 70$

$70 = 70$ ✓

$\left(\frac{39}{5}, \frac{47}{25}\right)$

Retakes this afternoon!

Homework Questions?

Make sure you check the answer keys.

#11 Purple sheet

$$-4x-9y=1$$
$$4[-x+2y=-4] \Rightarrow -4x+8y=-16$$

$$-17y=17$$
$$\frac{-17y}{-17}=\frac{17}{-17}$$
$$y=-1$$

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

Let's solve some

real life problems

Don't forget ...

LET

STATEMENTS

For each problem, your set up should look like this:

Let x =

Let y =

Use 3 Reads

The sum of two numbers is 36. Their difference is 6. Find the numbers.

2nd Read

What are our variables?

The sum of two numbers is 36. Their difference is 6. Find the numbers.

Let x = first #

Let y = 2nd #

3rd Read

What are our equations?

The sum of two numbers is 36. Their difference is 6. Find the numbers.

$x + y = 36$

$x - y = 6$

First Read

A theater sold 900 tickets to a play. Floor seats cost $12 each and balcony seats $10 each. Total receipts were $9,780. How many of each type of ticket were sold?

2nd Read

What are our variables?

A theater sold 900 tickets to a play. Floor seats cost $12 each and balcony seats $10 each. Total receipts were $9,780. How many of each type of ticket were sold?

x = # of floor seats

y = # of balcony seats

3rd Read

What are our equations?

A theater sold 900 tickets to a play. Floor seats cost $12 each and balcony seats $10 each. Total receipts were $9,780. How many of each type of ticket were sold?

$$\begin{cases} 12x + 10y = 9780 \\ x + y = 900 \end{cases}$$

What Do You Get When You Cross a Monastery With a Lion?

Write the two letters for each correct answer in the two boxes with the exercise number.

1. The sum of two numbers is 92. Their difference is 20. Find the numbers.

2. The difference of two numbers is 16. The greater number is 5 less than 4 times the smaller number. Find the numbers.

3. A 100-foot cable is cut into two pieces. The first piece is 18 ft longer than the second. How long is each piece?

4. Three apples and four bananas cost $4.85. Three apples and ten bananas cost $8.75. Find the cost of an apple.

5. Stilt scored 5 points less than twice the number scored by Dunk. Together they scored a total of 43 points. How many points were scored by each player?

6. Bert's age plus twice Ernie's age is 30. Three times Bert's age plus 8 times Ernie's age is 108. How old are Bert and Ernie?

7. The Rocket Coaster has 15 cars, some that hold 4 people and some that hold 6 people. There is room for 72 people altogether. How many 4-passenger cars are there? How many 6-passenger cars are there?

8. Tickets to the Valentine Dance cost $3 per person or $5 per couple. If $475 worth of tickets were sold and 180 people attended the dance, how many couples were there?

9. Pi High School ordered 40 science books. The next week, the school ordered 30 algebra books. The bill for the first order was $360 greater than the bill for the second order. The two bills together totaled $3960. Find the price of an algebra book.

O F	14, 10
L A	9, 6
A R	59 ft, 41 ft
E N	$0.82
I A	$60
N G	56, 36
S O	25, 18
F R	12, 9
E D	62
T H	57 ft, 43 ft
R P	23, 7
E E	$57
O A	65
R I	27, 16
S T	58, 38
C E	$0.75
E A	8, 7

3	3	8	8	5	5	1	1	6	6	9	9	2	2	7	7	4	4

Homework

Finish classwork