Name _____ Date _____

Word Problems That Require Equations or Inequalities - Guided Lesson Explanation

Explanation #1

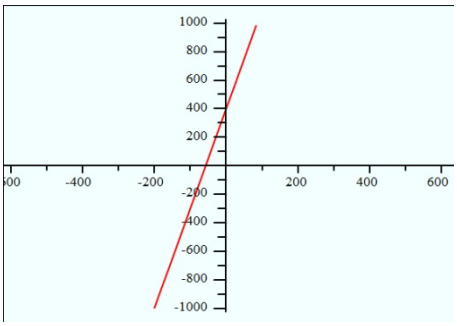
The solution would be to find where these two lines intersect.

Let's graph the first equation.

y = 7x + 400

The y-intercept is 400.

The slope is 7. That is the same as 400/100. Move up 400 and to the right 100 (100, 1100). Plot that point and connect a line to those points.

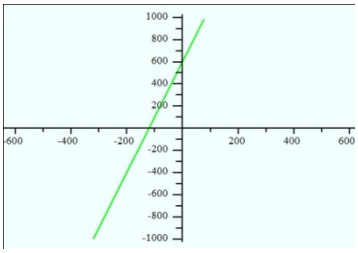


Time to graph the second equation.

y = 5x + 600

The y-intercept is 600. Plot the point (0, 600).

The slope is 5. That is the same as 600/100. Move up 600 and to the right 100 (100, 1100). Plot that point and connect a line to those points.



Finally, identify the point of intersection.

The lines intersect at (100, 1100).

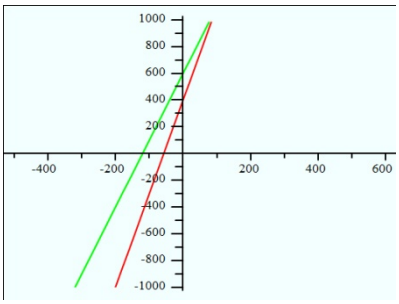
Name _____ Date _____

At the 100th installment, the total payment of each loan would be $1,100.

Start by writing a system of equations. Let x = installment and y = total price of car.

y = 7x + 400

y = 5x + 600



Name _____ Date _____

Explanation #2

Isolate a variable.

Plug the result of Step 1 into the other equation and solve for one variable.

Plug the result of Step 2 into one of the original equations and solve for the other variable.

Before you can solve, you must write a system of equations. Let x = visitors, and let y = total expenses.

y = 10x + 50

y = 12x

The variable y is already isolated in the first equation.

Plug the result of Step 1 into the other equation and solve for one variable.

Plug y = 10x + 50 into the other equation, y= 12 and find the value of x.

12x = 10x + 50

12x - 10x = 50 Plug in y = 12x

2x= 50

X=25 = x value is 25

Take the result of Step 2, x = 50, and plug it into one of the original equations, such as y = 10x + 50. Then find the value of y.

y = 10x + 50

y = 10(25) + 50 Plug in x = 25

y = 250 + 50 Multiply

y = 300 Add

Since x = 25 and y = 300, the solution is (25,300).

Once 25 attendees have registered, the company's expenses and receipts will both total $300.

Name _____ Date _____

Explanation#3

Follow the same procedure that we did in 2.

Before you can solve, you must write a system of equations.

Let x = visitors, and let y = total expenses.

y = 15x + 100

y = 20x

The variable y is already isolated in the first equation.

Plug the result of Step 1 into the other equation and solve for one variable.

Plug y = 15x + 100 into the other equation, y= 20 and find the value of x.

20x = 15x + 100

20x - 15x = 100 Plug in y = 20x

5x= 100

X=20 = x value is 20

Take the result of Step 2, x = 20, and plug it into one of the original equations, such as y = 15x + 100. Then find the value of y.

y = 15x + 100

y = 15(20) + 100 Plug in x = 20

y = 300 + 100 Multiply

y = 400 Add

Since x = 20 and y = 400, the solution is (20,400).

Once 20 attendees have registered, the James's expenses and receipts will both total $400.