SYSTEMS APPLICATIONS

Agenda

Warm-Up
HW Check
Activity

Reminders

HW 4.2 due before you leave

No School Monday!

Quiz next Friday

Warm-Up Friday

$$y = 3x - 5$$

slope

1. How would the graph change if the negative 5 was replaced with a positive 2?

$y = 3x + 2$ moved up 7

2. How would the graph of this line be affected if the slope was replaced with a 2?

$y = 2x - 5$ less steep

Questions, comments, concerns?

Algebra I - Unit 6: Topic 2 – Solving Systems by Substitution

Practice – Solving Systems by Substitution **pp 390-396**

Name ______________________ Date ________________ Period__________

Find the solution for each system of linear equations.

1. $y = 2x$
   $x + y = 12$

2. $y = 2x - 5$
   $4x + y = 7$

3. $x - y = 2$
   $[illegible]x - 3y = 11$
   OMIT

4. $m + t = 2.10$
   $2m - 3t = 5.15$
   OMIT

The equations of two lines are $2x - 3y = 12$ and $x = 4y + 1$. What is the value of x in the solution for this system of equations?

$2x - 3y = 12$

$x = 4y + 1$

$2(4y+1) - 3y = 12$

$8y + 2 - 3y = 12$

$5y + 2 = 12$
$-2 \quad -2$

$\frac{5y}{5} = \frac{10}{5}$

$y = 2$

$x = 4(2) + 1$

$x = 9$

Find the solution for each system of linear equations.

6. $4y + x = 5$
   $x + 4y = 10$

7. If $-2x + [illegible]y = 14$, $x - 2y = 7$, then $x - y = ?$
   OMIT

Algebra I - Unit 6: Topic 2 – Solving Systems by Substitution

Find the solution for each system of linear equations.

8. Tyler is six years older than his sister, and the sum of their ages is 32. How old is Tyler? How old is his sister?

Let Statements

Answer (complete sentence):

What mistake was made in solving the following system of equations?

$-3x + y = -4 \longrightarrow y = 3x - 4$

$3y = 15x + 6$

Step 1: $3(3x - 4) = 15x + 6$

Step 2: $9x - 12 = 15x + 6$

Step 3: $6 = 24x$

Step 4: $\frac{1}{4} = x$

A Did not solve for y correctly

B Did not distribute correctly in Step 1

C Should have subtracted $9x$ from $15x$ in Step 2

D No mistake was made

10. At the Cinema Snakshak, one customer bought 3 large popcorn buckets and 2 small drinks for a total of $21.00. Another customer bought one large popcorn bucket and 4 small drinks for a total of $17.00. Find the cost of a large popcorn.

Let Statements

popcorn = p

drinks = d

Answer: (in a complete sentence)

popcorn is $5.

Given the equations $y - 3x = 8$ and $3x = 2y + 7$, what would you substitute for y in the equation $3x = 2y + 7$?

A $8 - 3x$

B $\frac{8}{3}x$

C $8 + 3x$

D $8 \cdot 3x$

SYSTEMS APPLICATIONS

Algebra I – Unit 6: Topic 1 – Valentine's Day NAME:

Activity Sheet – Valentine's Day **No textbook correlation**

Valentine's Day

The school's drill team is selling roses on Valentine's Day for a fund raiser. They have contacted several flower distributors and have narrowed the choice down to two companies.

Option 1 — **Roses-R-Red** has offered to sell its roses for a fixed down payment of $20 and an additional charge of $0.75 per rose.

Option 2 — **The Flower Power** has offered to sell its roses for a fixed down payment of $60 and an additional charge of $0.50 per rose.

Which company would you choose? Explain your reasoning.

_____

_____

_____

Using Tables to Find the More Economical Offer

From the description of the two offers, complete the chart below to find an algebraic rule that will determine the cost of *n* roses.

Number of Roses	Process Column	Cost at Roses-R-Red	Process Column	Cost at Flower Power
10	$20 + 0.75(10)$	27.50	$60 + .5(10)$	65
20	$20 + 0.75(20)$			
60				
150				
180				
210				
1000				
n				

1. How many roses can you buy from Roses-R-Red for $65.00?
2. How many roses can you buy from Flower Power for $65.00?
3. From the table can you tell which company offers the better deal? Explain your reasoning.

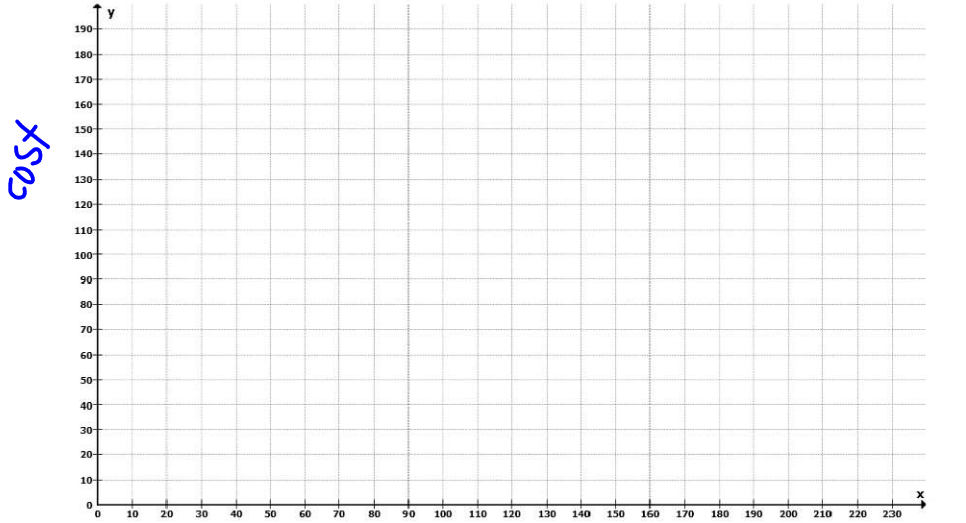
Both sides due by end of period!

Algebra I – Unit 6: Topic 1 – Valentine's Day

4. Is there a point where the two flower dealers charge the same total amount? If so, write an equation that represents the point where the two flower shops charge the same amount. If not, why do the costs never equal?

Using Graphs to Find the Better Offer

5. Sketch both functions on the graph provided below. Label your axis and your lines.



6. What are the coordinates of the point of intersection of the two functions? _____
What is the significance of this point?