

Linear Systems Reteach – Block Day

★ "If you fail to plan, you are planning to fail!" – Benjamin Franklin (Systems Retest on FRIDAY!!!!) ★

Linear Systems Review Packet (Monday)		
#	My Answer ☺ or ☹	Correct Answer
1		A
2		C
3		A
4		B
5		B
6		C
7		A
8		B
9		B
10		D
You must correct your review and turn it in by Friday, 3/7/14. All work MUST be shown.		
Total Correct: /10 Score: %		

Systems Practice (Word Problems - Tuesday)		
#	My Answer ☺ or ☹	Correct Answer
1		D
2		C
3		A
4		C
5		1
6		C
7		A
8		B
9		B
10		B
11		C
Total Correct: /11 Score: %		

Answer each the following using any method. Show all work.

1. What is the value of y in the solution to the system of linear equations?

$$\begin{aligned} x &= -2y \\ x + 4y &= 2 \end{aligned}$$

2. What is the value of x in the solution to the system of linear equations below?

$$\begin{aligned} y &= 2x + 2 \\ -3x + y &= -5 \end{aligned}$$

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

4. What is the solution to this pair of linear equations?

$$\begin{aligned} 3x - y &= 8 \\ x + 2y &= 5 \end{aligned}$$

Situation	Algebraic (Equations)
<p>5. Karla buys 6 movie tickets for a total of \$29. If adult tickets cost \$5.50 each and child tickets cost \$3.50 each, determine the system of the equations that will represent this situation if A represents the number of adult tickets bought and C represents the number of children tickets bought.</p>	<p>Equation: _____</p> <p>Equation: _____</p>

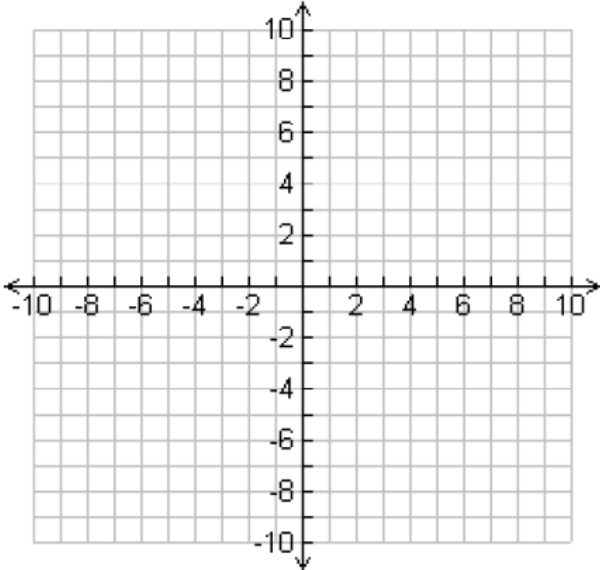
Graph	Work and Solution (ordered pair)
	<p style="text-align: center;">Solution: (,)</p>

Table	Solution (sentence) – What does the solution represent?																								
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Situation	Algebraic (Equations)
<p>6. Petra has a coin collection consisting of quarters and dimes. She has 27 coins worth \$5.70. Determine the systems of equations that could be used to find the number of quarters, q, and dimes, d, that Petra has.</p>	<p>Equation: _____</p> <p>Equation: _____</p>

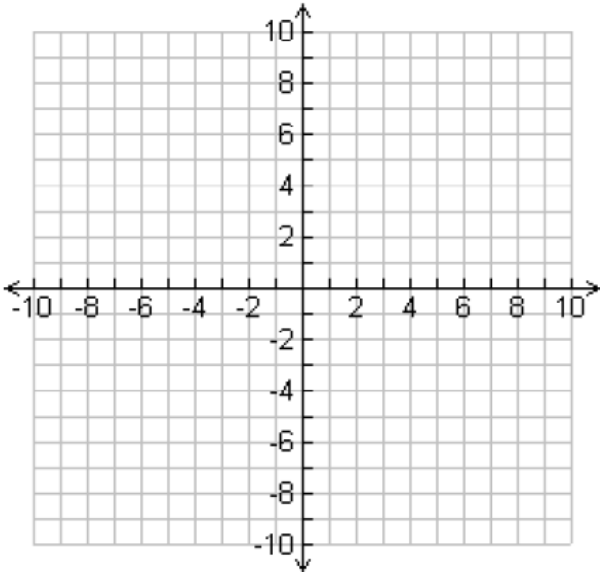
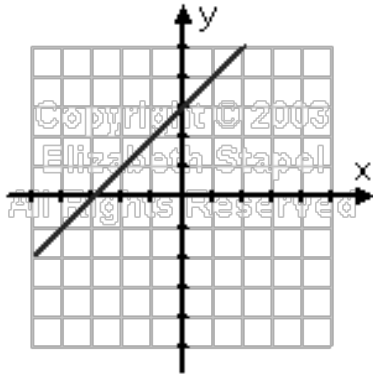
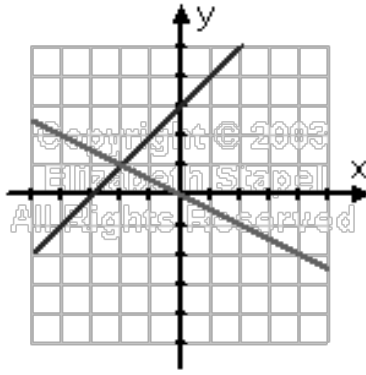
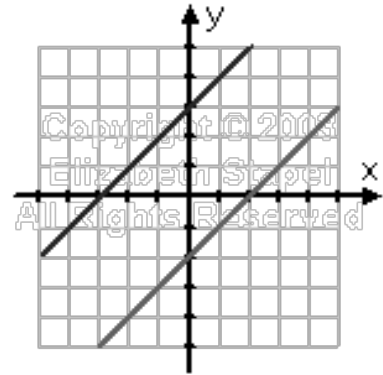
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7. Label the following systems of equations as having **one solution**, **no solution**, or **infinitely many solutions**.

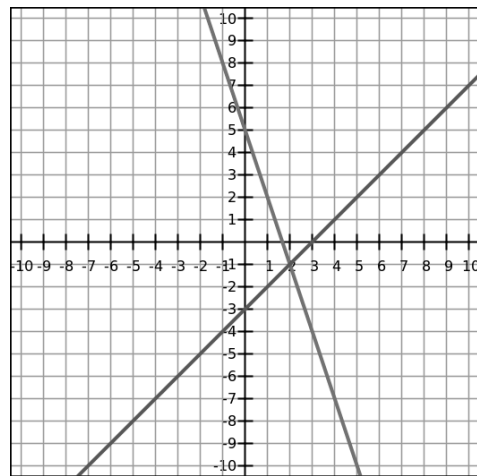






8. The following is a graph of a linear system.
What is the solution to this system?

Solution: _____



Example of Solving a Linear System using *Substitution*:

$$\begin{aligned} 2x - 3y &= -2 \\ 4x + y &= 24 \end{aligned}$$

The idea here is to solve one of the equations for one of the variables, and plug this into the other equation. It does not matter which equation or which variable you pick. There is no right or wrong choice; the answer will be the same, regardless. But — some choices may be better than others.

For instance, in this case, can you see that it would probably be simplest to solve the second equation for "y =", since there is already a y floating around loose in the middle there? I could solve the first equation for either variable, but I'd get fractions, and solving the second equation for x would also give me fractions. It wouldn't be "wrong" to make a different choice, but it would probably be more difficult. Being lazy, I'll **solve the second equation for y:**

$$\begin{aligned} 4x + y &= 24 \text{ becomes } y = -4x + 24 \\ -4x & \quad -4x \end{aligned}$$

Now I'll plug this in ("substitute it") for "y" in the **first** equation, and solve for x:

$$\begin{aligned} 2x - 3(-4x + 24) &= -2 \\ 2x + 12x - 72 &= -2 \\ 14x &= 70 \\ \mathbf{x} &= \mathbf{5} \end{aligned}$$

Now I can plug this x-value back into either equation, and solve for y. But since I already have an expression for "y =", it will be simplest to just plug into this:

$$\begin{aligned} y &= -4(\mathbf{5}) + 24 \\ y &= -20 + 24 \\ \mathbf{y} &= \mathbf{4} \end{aligned}$$

Then the solution is (x, y) = (5, 4).