

Solving Systems of Equations

Directions: Welcome back from your break! Before break we were working hard to understand how to solve a system of linear equations. Remember we started this unit by looking at Coin Riddles, and used whatever method we could to determine the answer. Then we started learning how to use graphing and substitution to solve more complicated systems. Today we will get back into the swing of school by reviewing our methods.

EXAMPLE: Find the value of two numbers if their sum is 12 and their difference is 4

Or solve by graphing

Let $x = \text{number 1}$ and $y = \text{number 2}$

① $x + y = 12$

$x - y = 4$

② solve for x

$$\begin{array}{r} x - y = 4 \\ + y \quad + y \\ \hline x = 4 + y \end{array}$$

$x = 4 + y$

$x = 4 + 4$
 $x = 8$

③ sub and solve

$x = (4 + y) \rightarrow x + y = 12$

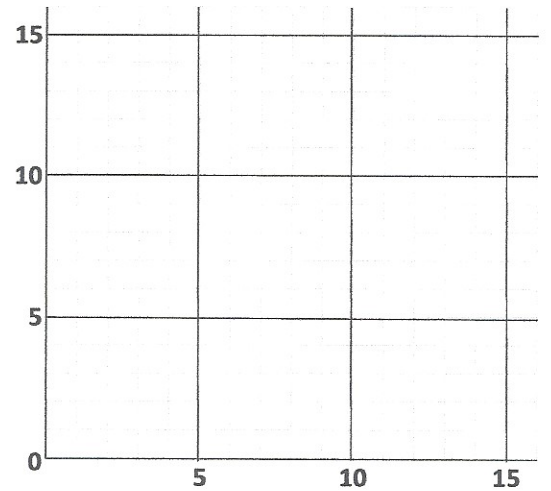
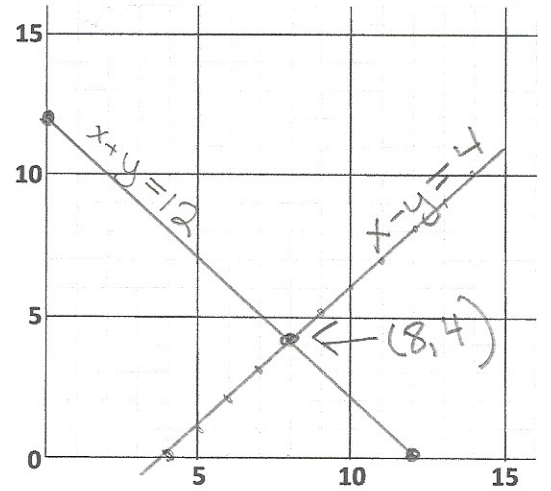
$(4 + y) + y = 12$

$4 + 2y = 12$
 $-4 \quad -4$

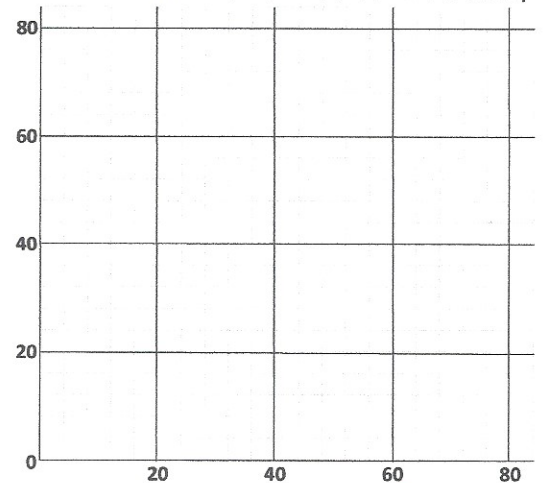
$2y = 8$

$y = 4$

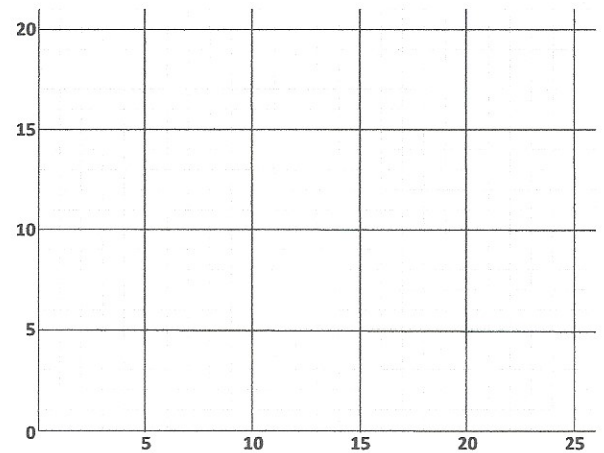
1.) The difference of two numbers is 3. Their sum is 13. Find the numbers.



2.) You have a handful of nickels and dimes (80 coins in all.) You count out the coins and it came to \$6.60. How many of each coin do you have?



3.) Tickets at the AMC theater are sold for either student rate or adult rate. The group in front of you paid \$22 for 1 adult ticket and 3 student tickets. Your group buys 2 adult tickets and 5 students tickets for \$39. How much does an adult ticket and a student ticket cost?



4.) This year the senior class is planning a trip to Cedar Point for Senior skip day. They rent and filled 8 cars and 4 minibuses with 120 students. The junior class decided to join them. They rent and filled 4 cars and 3 minibus with 78 students. Every car had the same number of students in it as did the minibuses. Find the number of students in each car and in each minibus.

