GUIDED NOTES: Applications of Systems of Equations

Step 1: Define your variables
Step 2: Set up your systems of equations
Step 3: Solve the system
Step 4: Write your answer in context of the problem based on the variables you set up

EX1. Sue has a collection of quarters and nickels. She has 17 coins whose total value is $1.85. How many of each type of coin does she have?

.25q = quarters
.05n = nickels

$q + n = 17$

$.25q + .05n = 1.85$

EX2. A certain movie theater has a capacity of 250 people. A child's ticket costs $3.00 and an adult movie ticket costs $4.50. A full house last night made $1017. How many children and adults attended the movie?

c = children
a = adult

$3c + 4.5a = 1017$

$c + a = 250$

EX3. Jaden took 60 minutes to answer a combination of 20 multiple-choice and extended-response questions. He took 2 minutes to answer each multiple choice question and 6 minutes to answer each extended-response question. How many of each type of question was on the test?

M = multiple choice
E = Extended response

$M + E = 20$

$2M + 6E = 60$

Ms. Maher

EX4. The Myers Cell Phone Company charges $50 per month plus 15 cents per minute while the Buffkin Cell Phone Company charges no monthly fee but 25 cents per minute. After how many minutes of phone usage would a monthly phone bill be the same from both companies?

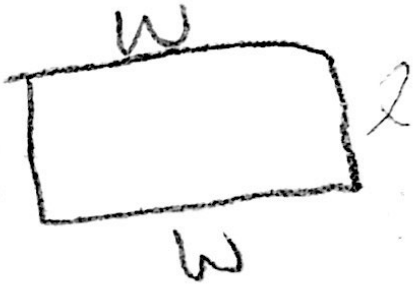
← intersection

Myers: $b = 50 + .15m$

Buffin: $b = .25m$

m = minute
b = bill

EX5. The perimeter of a rectangle is 64 feet. The length is thirteen feet less than twice the width. Find the dimensions of the rectangle.



Perimeter:

$2l + 2w = 64$

$l = 2w - 13$

l: length
w: width

After setup can have to solve like always