## **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?

$$\begin{array}{r}
.250 + .05n = 1.85 \\
-.250 \\
\underline{.05n} = 1.85 - .250 \\
\underline{.05} \quad .05 \\
0.05 \\
0.05
\end{array}$$

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?

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?

$$m + e = 20$$

m:#of multiple-choice 
$$m + e = 20$$
  
e:#of extended-response  $2m + be = 60$ 

$$2m + 6e = 60$$

\*then solve by graphing

EX4. The Robertson Cell Phone Company charges \$50 per month plus 15 cents per minute while the Stogner 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?

m: #of minutes

Robertson > b = 50+.15m

b: bill

Stogner  $\Rightarrow$  b = 0+.25 m

\* then solve by graphing

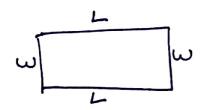
EX5. The perimeter of a rectangle is 64 feet. The length is thirteen feet less than twice the width. Find the dimensions of the rectangle.

L:length

2L+2W=64

w: width

L=2w-13



P=2L+2W