Day 6 – Problem Solving with Elimination – Notes

1. Love Street is having a sale on jewelry and hair accessories. You can buy 5 pieces of jewelry and 6 hair accessories for 34.50 or 2 pieces of jewelry and 16 hair accessories for $33.00. This can be modeled by the equations: $\begin{cases} 5x+8y=34.50 \\ 2x+16y=33.00 \end{cases}$ (-2). How much is each piece of jewelry and hair accessories?

a. What does x and y represent?

x: cost of jewelry
y: cost of hair accessories

b. Explain what the first equation represents:

Represents the first combo of jewelry and hair accessories

c. Explain what the second equation represents:

Represents the second combo of jewelry and hair accessories

d. Solve the system of equations:

$-10x-16y=-69$
$2x+16y=33$

$-8x=-36$

$\frac{-8x}{-8}=\frac{-36}{8}$

$x=4.50$

$2(4.50)+16y=33$
$9+16y=33$
$16y=24$
$y=1.50$

Jewelry costs $4.50 and hair accessories cost $1.50

2. A test has twenty questions worth 100 points. The test consists of True/False questions worth 3 points each and multiple choice questions worth 11 points each. This can be modeled by $\begin{cases} x+y=20 \\ 3x+11y=100 \end{cases}$ (-3). How many multiple choice and True/False questions are on the test?

a. What does x and y represent?

x: T/F Questions
y: MC Questions

b. Explain what the first equation represents:

It represents the total amount of questions

c. Explain what the second equation represents:

It represents the point values of the questions.

d. Solve the system of equations:

$-3x-3y=-60$
$3x+11y=100$

$8y=40$

$y=5$

$x+5=20$
$x=15$

There are 15 T/F questions and 5 MC questions