Honors Algebra II

Unit 1 – Foundations of L.A.

MATH, ENGINEERING, AND SCIENCE ACADEMY

Systems WP Practice

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Zoom Car Rentals charges $25 per day, plus 35¢ per mile to rent a car. Friendly Car Rentals charges 55¢ per mile with no upfront fee. If "c" is the total rental cost and "m" is the number of miles, write a system of equations to represent the situation.

$$\begin{cases} C = 0.35m + 25 & \leftarrow \text{Zoom} \\ C = 0.55m & \leftarrow \text{Friendly} \end{cases}$$

The entrance fee to gain admission to Carnival A is $4 per person and the cost for a ticket to ride an attraction is $2. Carnival B only charges $2 per person for admission, but tickets to ride cost $2.50 each. Write a system of equations that could be used to represent the situation.

r → rides
c → cost

$$\begin{cases} C = 2r + 4 & \rightarrow \text{Carnival A} \\ C = 2.5r + 2 & \rightarrow \text{Carnival B} \end{cases}$$

* variables don't matter unless assigned *

A concession stand sells hamburgers. One family orders two hamburgers and three hotdogs and pays $20.50. The next order is for three hamburgers and two hotdogs and totals $22. Write a system of equations and solve for the individual price of a hamburger and hotdog.

$$\begin{cases} 2x + 3y = 20.50 & \rightarrow \text{First order} \\ 3x + 2y = 22 & \rightarrow \text{second order} \end{cases}$$

Hamburgers - x
Hotdogs - y

All questions will be multiple choice! As long as you can create the equation, plug in the responses!!!

A concession stand sells sodas for 75¢ and waters for $1.25. Six beverages are purchased for a total of $5.50. How many of each type of beverage was purchased?

$$.75S + 1.25W = 5.50$$

Ber

$S + W = 6$
$-W \quad -W$
$S = 6 - W$

once your equations are created, find an equation easy to isolate a variable. Then substitute. OR Use MULTIPLE CHOICE

A bakery sells cupcakes for $3.00 and cookies for $1.50. You buy 15 desserts for a party and pay $31.50. How many of each dessert did you buy?

$$3C + 1.50K = 31.50$$

Food

$C + K = 15$
$-K \quad -K$
$C = 15 - K$

$3(15 - K) + 1.50K = 31.50$
$45 - 3K + 1.50K = 31.50$
$45 - 1.50K = 31.50$
$-45 \quad -45$
$\frac{-1.50K}{-1.50} = \frac{-13.50}{-1.50}$
$K = 9$

C ⇒ cupcake
K ⇒ Cookies

9 cookies
6 cupcakes

A large pizza at Tony's Pizzeria costs $6.80 plus $0.90 for each topping. The cost of a large cheese pizza at Royal's Pizza is $7.30 plus $0.65 for each topping. How many toppings need to be added to a large cheese pizza from Tony's Pizzeria and Royals's Pizza in order for the pizzas to cost the same, not including tax?

$$\begin{cases} y = 0.90x + 6.80 & \leftarrow \text{Tonys} \\ y = 0.65x + 7.30 & \leftarrow \text{Royals} \end{cases}$$

* "same" in math implies "equal"

$$0.90x + 6.80 = 0.65x + 7.30$$

Again solve OR substitute answers when given MC. Creating the equation is the hardest part!!!