

2.5 Elimination Applications Practice

Applications

- Read the problem and underline relevant information.
- Define your variables.
- Write two equations to represent the situation.
- Solve for the variables and answer the question being asked. You can use any method to solve the system. For practice using the elimination method, solve the questions below with the elimination method. *Don't forget units*

1. Marcie bought a total of 20 used books and CDs during a yard sale for a total of \$54.50. If books cost \$1.50 each and CDs cost \$5 each, how many did she buy? *x and y*

x: books bought
y: CD's bought

$$20 = x + y$$

\uparrow \uparrow \uparrow
 $\#$ $\#$ $\#$

$$54.50 = 1.5x + 5y$$

\uparrow \uparrow \uparrow
 $\$$ book. $\$$ book $\$$
 $\$$

$$\begin{array}{r} \textcircled{1} \quad 20 = x + y \\ \textcircled{2} \quad 54.50 = 1.5x + 5y \end{array} \quad \times (-5)$$

$$\underline{-100 = -5x - 5y} \quad \leftarrow \textcircled{1}$$

$$-45.50 = -3.5x$$

$x = 13 \text{ books}$

$$20 = 13 + y$$

$y = 7 \text{ CD'S}$

2. A storeowner mixed 8 pounds of peanuts and 5 pounds of M&Ms. This 13-pound mixture sold for \$55.27. a second mixture included 6 pounds of peanuts and 4 pounds of M&Ms. This 10-pound mixture sold for \$42.70. Find the cost per pound of the peanuts and M&Ms.

x: cost of 1lb. peanuts
y: cost of 1lb. M+M

$$\begin{array}{r} 8x + 5y = 55.27 \\ 6x + 4y = 42.70 \end{array} \quad \times (-5)$$

$$\begin{array}{r} 32x + 20y = 221.08 \\ -30x - 20y = -213.50 \\ \hline 2x = 7.58 \\ x = 3.79 \end{array}$$

$$\begin{array}{r} 8x + 5y = 55.27 \\ 8(3.79) + 5y = 55.27 \\ 5y = 24.95 \\ y = 4.99 \end{array}$$

peanuts \$3.79/lb
M+M \$4.99/lb