



Using Systems of Equations to Solve a Word Problem #1

Video Notes

[Video Link](#)

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Tom and Kelly purchased candy for their friends. Tom got 7 chocolate candies and 10 fruit snacks for \$17.25. Kelly bought 8 chocolate candies and 6 fruit snacks for \$17. What is the price of each type of candy?

1. Identify what you know.
2. Identify what you WANT to know.
3. Draw a picture or diagram (if it helps).
4. Write specific let statements. (What do I not know?)

Let cost of chocolate = c
 Let cost of fruit snack = f

5. Write your equations.

Tom: $7c + 10f = 17.25$

Kelly: $8c + 6f = 17$

6. Solve!

$$\begin{array}{r}
 3(7c + 10f = 17.25) \rightarrow 21c + 30f = 51.75 \\
 -5(8c + 6f = 17) \rightarrow -40c - 30f = -85 \\
 \hline
 -19c = -33.25 \\
 \frac{-19c}{-19} = \frac{-33.25}{-19} \\
 c = \underline{\$1.75}
 \end{array}$$

LCM of 10 + 6; 30

$$\begin{array}{r}
 8c + 6f = 17 \\
 8(1.75) + 6f = 17 \\
 \hline
 14 + 6f = 17 \\
 -14 \quad -14 \\
 \hline
 6f = 3 \\
 \frac{6f}{6} = \frac{3}{6} \\
 f = \underline{\$0.50}
 \end{array}$$

∴ A chocolate candy cost \$1.75 and a fruit snack costs \$0.50

7. Ask yourself if your answer makes sense.

Tom: 7 chocolate + 10 fruit snacks

$$\begin{array}{r} \downarrow \qquad \qquad \qquad \downarrow \\ 7(1.75) \qquad + \qquad 10(0.50) \\ 12.25 \qquad \qquad + \qquad 5 \\ \hline \qquad \qquad \qquad \qquad \qquad \qquad \$17.25 \end{array}$$

Kelly: 8 chocolate + 6 fruit snacks

$$\begin{array}{r} \downarrow \qquad \qquad \qquad \downarrow \\ 8(1.75) \qquad + \qquad 6(0.50) \\ 14 \qquad \qquad \qquad + \qquad 3 \\ \hline \qquad \qquad \qquad \qquad \qquad \qquad \$17 \end{array}$$