

A band wants to buy four new microphones and microphone stands. Each new microphone costs \$85.95 and each new stand costs \$19.50. They also want to sell their four old microphones and stands, and can get \$35.20 for each old microphone and \$8.68 for each old stand. If the band has \$500.00 in its budget, how much will they have left after purchasing the new equipment and selling back their old equipment?

- A. \$305.00
- B. \$253.72
- C. \$227.00
- D. \$369.92

Addition, multiplication, and subtraction.
Order of operations.

You can multiply first (solution 1) or add first (solution 2).

Solution 1: Multiply first, then add

$$\begin{array}{r} \text{New Microphones} = \begin{array}{r} \overset{2}{8} \overset{3}{5} \overset{2}{.} \overset{2}{9} \overset{2}{5} \\ \times \quad \quad \quad 4 \\ \hline \end{array} \quad \text{Stands:} \quad \begin{array}{r} \overset{3}{1} \overset{2}{9} \overset{2}{.} \overset{2}{5} \overset{2}{0} \\ \times \quad \quad \quad 4 \\ \hline \end{array} \\ \text{\$ } 343.80 \qquad \qquad \text{\$ } 78.00 \end{array}$$

$$\begin{array}{r} \text{Total Cost:} \quad \begin{array}{r} 343.80 \\ + 78.00 \\ \hline \end{array} \\ \text{\$ } 421.80 \end{array}$$

$$\begin{array}{r} \text{Sell old microphones} = \begin{array}{r} \overset{2}{3} \overset{2}{5} \overset{2}{.} \overset{2}{2} \overset{2}{0} \\ \times \quad \quad \quad 4 \\ \hline \end{array} \quad \text{Stands:} \quad \begin{array}{r} \overset{2}{8} \overset{3}{.} \overset{2}{6} \overset{2}{8} \\ \times \quad \quad \quad 4 \\ \hline \end{array} \\ \text{\$ } 140.80 \qquad \qquad \text{\$ } 34.72 \end{array}$$

$$\begin{array}{r} \text{Total Gain:} \quad \begin{array}{r} 140.80 \\ + 34.72 \\ \hline \end{array} \\ 175.52 \end{array}$$

Overall Budget:

$$\begin{array}{r} 500.00 \\ - 246.28 \\ \hline \end{array} \text{\$ } 253.72$$

$$\begin{array}{r} \text{Reduce cost:} \\ 421.80 \\ - 175.52 \\ \hline \end{array} \text{\$ } 246.28$$

Solution 2: Add first, then multiply

$$\begin{array}{r} \text{New microphones and stands:} \quad \begin{array}{r} 85.95 \\ + 19.50 \\ \hline \end{array} \\ \text{\$ } 105.45 \end{array}$$

$$\begin{array}{r} 4 \text{ sets:} \quad \begin{array}{r} \times \quad \quad 4 \\ \hline \end{array} \\ \text{\$ } 421.80 \end{array}$$

$$\begin{array}{r} \text{Old microphones and stands:} \quad \begin{array}{r} 35.20 \\ + 8.68 \\ \hline \end{array} \\ \text{\$ } 43.88 \end{array}$$

$$\begin{array}{r} 4 \text{ sets:} \quad \begin{array}{r} \times \quad \quad 4 \\ \hline \end{array} \\ \text{\$ } 175.52 \end{array}$$

$$\begin{array}{r} 421.80 \\ - 175.52 \\ \hline \end{array} \text{\$ } 246.28$$

$$\begin{array}{r} 500.00 \\ - 246.28 \\ \hline \end{array} \text{\$ } 253.72$$