Using Fractions with the Imperial System

1. Convert $3\frac{7}{8}$ ft to inches.

Step 1: Express $3\frac{7}{8}$ ***ft as an improper fraction.***

$$3\frac{7}{8}\ ft = \frac{31}{8}\ ft$$

Step 2: Write a proportion, and solve for the unknown.

$$\frac{y}{\frac{31}{8}\ ft} = \frac{12\ in}{1\ ft}$$

$$\frac{y}{\frac{31}{\cancel{8}}\cancel{ft}} \times \frac{31}{\cancel{8}}\cancel{ft} = \frac{12\ in}{1\ \cancel{ft}} \times \frac{31}{8}\ \cancel{ft}$$

$$y = 46.5\ in$$

There are 46.5 inches in $3\frac{7}{8}$ *ft.*

2. Trisha is putting baseboards in her living room. The width of the room is $23' \ 9\frac{15}{16}''$ and the length is $14' \ 5\frac{1}{2}''$. What length of baseboard does Trisha need?

Hint: Add the two measurements, and then multiply the answer by 2.

Step 1: Add the smallest unit, the inches.

$$9\frac{15}{16}'' + 5\frac{1}{2}'' = 9\frac{15}{16}'' + 5\frac{8}{16}''$$
$$= 14\frac{23}{16}''$$

Step 2: Convert $14\frac{23}{16}''$ to feet and inches.

There are 12 inches in a foot, so this measurement can be written as $1' \ 2\frac{23}{16}'' = 1' \ 3\frac{7}{16}''$.

Step 3: Determine the sum of the length and width.

$$23' + 14' + 1' \ 3\frac{7}{16}'' = 38' \ 3\frac{7}{16}''$$

Step 4: Find the total length of baseboard.

$$38' \ 3\frac{7}{16}'' + 38' \ 3\frac{7}{16}'' = 76' \ 6\frac{14}{16}'' = 76' \ 6\frac{7}{8}''$$

Trisha needs $76' \ 6\frac{3}{8}''$ of baseboard.