

NAME \_\_\_\_\_

Module 12 Attributes and Tools  
Lesson 4 Measurement: Distance

# Challenge Problems

## 12.4

### Set 1

1 List all the measurements on a ruler that are equivalent to  $2\frac{1}{2}$  inches. Use only customary measurements.

2 Lisa knits a pair of gloves. She uses a ruler to measure the length of her index finger. The measurement is between  $2\frac{1}{4}$  inches and  $2\frac{7}{16}$  inches. What is the measurement?

### Set 2

1 Subtract three feet five inches from four yards two inches.

## Possible Answers

### Set 1

1. I first write equivalent fractions for  $\frac{1}{2}$  that have four, eight, and 16 in the denominator. One-half equals  $\frac{2}{4}$ ,  $\frac{4}{8}$ , and  $\frac{8}{16}$ . So  $2\frac{2}{4}$ ,  $2\frac{4}{8}$ , and  $2\frac{8}{16}$  inches are each equivalent to  $2\frac{1}{2}$  inches.
2. Write each measurement with a common denominator.  $2\frac{1}{4}$  is equivalent to  $2\frac{4}{16}$ . The fractions on a ruler between  $\frac{4}{16}$  and  $\frac{7}{16}$  are  $\frac{5}{16}$  and  $\frac{6}{16}$ . The measurement is  $2\frac{5}{16}$  or  $2\frac{6}{16}$ .  $2\frac{6}{16}$  can be rewritten as  $2\frac{3}{8}$ .

### Set 2

1. Express the minuend in feet.

$$\begin{array}{r} 4 \text{ yd } 2 \text{ in.} \\ - 3 \text{ ft } 5 \text{ in.} \\ \hline \end{array} \longrightarrow \begin{array}{r} 12 \text{ ft } 2 \text{ in.} \\ - 3 \text{ ft } 5 \text{ in.} \\ \hline \end{array} \longrightarrow \begin{array}{r} 11 \text{ ft } 14 \text{ in.} \\ - 3 \text{ ft } 5 \text{ in.} \\ \hline 8 \text{ ft } 9 \text{ in.} \\ \text{or } 2 \text{ yd } 2 \text{ ft } 9 \text{ in.} \end{array}$$