Lesson 3: Basic Measurement Systems and Conversions

Are You Ready? Possible Answers

1. The following is the rule for multiplying fractions:

   - Convert any mixed fractions into improper fractions.
   - Multiply numerators together.
   - Multiply denominators together.
   - Reduce product to lowest terms.

2. a. $\frac{1\times3}{2\times4}=\frac{3}{8}$

   b. $\frac{2\times6}{3\times5}=\frac{12}{15}=\frac{4}{5}$

   c. $\frac{3\times2}{4\times1}=\frac{6}{4}=\frac{3}{2}$

   d.

   $\frac{1\times2\times3}{2\times3\times5}=\frac{6}{30}=\frac{1}{5}$

   or

   $\frac{1\times2\times3}{2\times3\times5}$ *reduce the* 2 *and* 3 *top and bottom*

   $=\frac{1}{5}$

3. Two fractions are equivalent if they are identical when reduced to lowest terms.

4. For a through c, we can use equivalent fractions and get

   a. $\frac{1}{2}=\frac{x}{6}$ (x 3)

   b. $\frac{3}{5}=\frac{12}{y}$ (x 4)

   c. $\frac{10}{x}=\frac{5}{6}$ (x 2)

   a. So since the denominator is multiplied by 3, we multiply the numerator by 3 and get x = 3. The same process for b and c yields
   b. y = 20
   c. x = 12

For d, the process of cross multiplication can be used and we get

d. $\frac{9}{6} \times \frac{12}{y}$

9y = 72

Divide both sides by 9

$$\frac{9y}{9} = \frac{72}{9}$$

$$y = 8$$

5. a. 100 cm
   b. 10 mm
   c. 1000 m
   d. 12 in
   e. 3 ft