

## 6.1 Multiplying a Fraction and a Whole Number

1. multiplication a) 3, 3 b) 2, 2  
c) 3, 12, 3
2. fraction, either,  $\frac{2}{3}$
3. a)  $4 \times \frac{1}{6} = \frac{2}{3}$  b)  $3 \times \frac{1}{2} = 1\frac{1}{2}$   
c)  $4 \times \frac{1}{3} = 1\frac{1}{3}$
4. a)  $4 \times \frac{2}{3} = \frac{8}{3}$  or  $2\frac{2}{3}$  b)  $2 \times \frac{8}{5} = \frac{16}{5}$  or  $3\frac{1}{5}$   
c)  $6 \times \frac{1}{7} = \frac{6}{7}$
5. a)  $1\frac{1}{5}$  b)  $2\frac{1}{2}$
6. a) 2 b)  $\frac{8}{9}$
7. a)  $\frac{3}{4}$  b)  $\frac{5}{8}$  c) 2 d) 5 e)  $1\frac{1}{2}$
8. 6 h
9.  $2\frac{3}{4}$
10. Methods will vary. 225 m

## 6.2 Dividing a Fraction by a Whole Number

1. b)
2. c)
3. a)
4. a)  $\frac{1}{6}$  b)  $\frac{5}{12}$
5. a)  $\frac{1}{12}$  b)  $\frac{5}{18}$
6. a)  $\frac{2}{9}$  b)  $\frac{3}{10}$
7. a)  $\frac{2}{3} \div 4$  b) Diagrams will vary.  $\frac{1}{6}$
8. a)  $\frac{3}{5} \text{ m} \div 2$  b) Diagrams will vary.  $\frac{3}{10} \text{ m}$
9. a) Expressions may vary. Example:  
 $\frac{9}{12} \div 4 = \frac{9}{48}$  or  $\frac{3}{16}$   
b) Diagrams will vary.

## 6.3 Multiplying Proper Fractions

1. paper folding
2. numerators, multiply
3. estimate

4. a)  $1, \frac{5}{9}$  b)  $0, \frac{4}{45}$  c)  $\frac{1}{4}, \frac{3}{20}$   
d)  $\frac{1}{2}, \frac{6}{15}$  or  $\frac{2}{5}$  e)  $\frac{1}{2}, \frac{21}{40}$  f)  $1, \frac{4}{5}$
5.  $\frac{1}{4} \text{ km}$
6.  $\frac{1}{8}$
7.  $\frac{1}{2}, \frac{1}{2}$
8. Québec's population is approximately  $\frac{2}{15}$  the population of Toronto.
9. Models will vary.  $\frac{1}{25}$
10.  $\frac{1}{12}$

## 6.4 Multiplying Improper Fractions and Mixed Numbers

1. a) True  
b) False You can estimate the product of two mixed numbers or improper fractions by multiplying the whole numbers closest to them.  
c) False Two mixed numbers can be multiplied by expressing them as improper fractions and then multiplying the numerators and multiplying the denominators.
2. a)  $1\frac{4}{5}$  b)  $2\frac{1}{6}$
3. a)  $\frac{5}{2}$  b)  $\frac{14}{3}$
4. Models will vary.  
a)  $\frac{1}{2}$  b) 3
5. a)  $1, \frac{4}{5}$  b)  $8, 9\frac{1}{3}$  c)  $6, 5\frac{5}{6}$
6. a)  $10\frac{1}{2} \text{ h}$  b) \$94.50
7.  $16\frac{4}{5}$
8.  $11\frac{1}{3} \text{ km}$
9.  $2\frac{4}{5} \text{ h}$
10. 3 tanks
11. 18 years old
12.  $9\frac{3}{4} \text{ h}$