6.5 Dividing Fractions and Mixed Numbers

MathLinks 8, pages 222–229

Key

Key Ideas Review
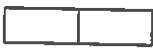
Match each method in column A with the example in column B that best matches it.

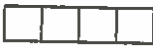| A	B
1. Use diagrams to estimate the quotient of two fractions. _____	a) $3\frac{3}{4} \div 1\frac{1}{2} = \frac{15}{4} \div \frac{3}{2}$ $= \frac{15}{4} \div \frac{6}{4}$ $= \frac{15}{6}$ or $2\frac{1}{2}$
2. Estimate the quotient of two improper fractions or mixed numbers by dividing the whole numbers closest to them. _____	b)
3. Divide two fractions by writing them with a common denominator, and dividing the numerators. _____	c) $5\frac{1}{5} \div 1\frac{2}{3} \approx 5 \div 2$ $\approx \frac{5}{2}$ or $2\frac{1}{2}$
4. Divide a fraction by multiplying by its reciprocal. _____	d) $\frac{3}{5} \div \frac{6}{7} = \frac{3}{5} \times \frac{7}{6}$ $= \frac{21}{30} = \frac{7}{10}$

Practise and Apply

5. Complete the diagrams to determine each quotient.

a) $\frac{5}{6} \div \frac{1}{3}$

b) $1\frac{1}{2} \div \frac{3}{4}$

c) $\frac{1}{3} \div \frac{1}{2}$

d) $1\frac{3}{4} \div \frac{2}{3}$

6. Divide using a common denominator. Show your thinking.

a) $\frac{2}{3} \div \frac{5}{6}$ $\frac{4}{5}$

b) $1\frac{7}{8} \div \frac{3}{4}$ 2

c) $3\frac{3}{10} \div 2\frac{2}{5}$ $\frac{2}{3}$

d) $1\frac{2}{3} \div 2\frac{5}{9}$ $2\frac{5}{8}$ $\frac{21}{8}$

7. Divide using multiplication.

a) $\frac{5}{8} \div \frac{2}{3}$

$\frac{15}{16}$

b) $7 \div 4\frac{2}{3}$

$1\frac{1}{2}$ $\frac{3}{2}$

c) $1\frac{5}{6} \div \frac{7}{12}$

$\frac{22}{7}$ $3\frac{1}{7}$

d) $6\frac{2}{3} \div 2\frac{1}{2}$

$2\frac{2}{3}$ $\frac{8}{3}$

8. Estimate, then divide using a common denominator. Show your thinking.

a) $1\frac{7}{8} \div 1\frac{1}{4}$ Estimate: _____
Calculate:

$1\frac{1}{2}$ $\frac{3}{2}$

b) $5\frac{7}{10} \div 3\frac{9}{10}$ Estimate: _____
Calculate:

$1\frac{6}{13}$ $\frac{19}{13}$

c) $2\frac{1}{6} \div 1\frac{5}{12}$ Estimate: _____
Calculate:

$1\frac{9}{17}$ $\frac{26}{17}$

9. Estimate, then divide using multiplication. Show your thinking.

a) $6\frac{5}{6} \div 3\frac{1}{2}$ Estimate: _____
Calculate:

b) $8\frac{1}{3} \div 2\frac{3}{4}$ Estimate: _____
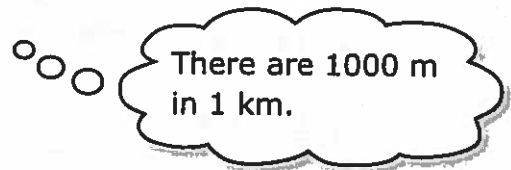Calculate:

c) $7\frac{1}{8} \div 4$ Estimate: _____
Calculate:

10. Carlos got $\frac{5}{6}$ of the test questions correct. This was 15 questions. How many questions were on the test? Show your thinking.

11. Alisha needed $\frac{3}{4}$ L of gasoline to mow the lawn. There was $3\frac{3}{4}$ L of gasoline in the container. How many times can she mow the lawn before refilling the container? Show your thinking.

12. Jean-Pierre walked $4\frac{1}{2}$ km in $1\frac{1}{4}$ h. If he walked at a steady pace, how fast did he walk in kilometres per hour? Show your thinking.

13. A running track used in competition is $\frac{2}{5}$ km. How many laps is the 1500 m race? Show two ways to solve the problem.

There are 1000 m in 1 km.