In Your Words

Here are some of the important mathematical words of this unit.
Build your own glossary by recording definitions and examples here. The first one is done for you.

proper and improper fractions

proper fractions have numerator less than denominator. improper fractions have numerator greater than denominator

simplest form of a fraction

reducing so numerator and denominator can not be divided by the same #

reciprocal of a fraction

a fraction that when multiplied by the 1ST fraction gives a product of 1. ⇒ Flip the fraction

mixed number

a number expressed as a whole # and a fraction

quotient

the answer to a division statement

order of operations

completing operations (+, −, ×, ÷) according to BEDMAS.

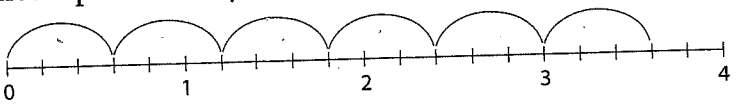
List other mathematical words you need to know.

Unit Review

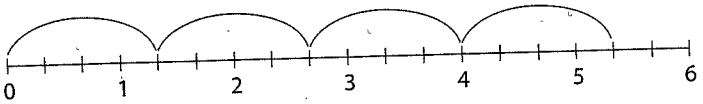
LESSON

3.1 **1.** Write the multiplication sentence represented by each number line.

a) $6 \times \frac{3}{5}$

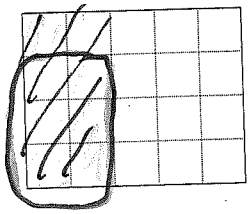


b) $4 \times 1\frac{1}{3}$

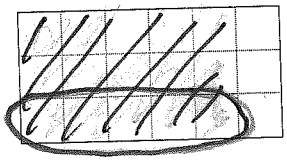


3.2 **2.** Shade each rectangle to show the product.

a) $\frac{3}{4} \times \frac{2}{5}$



b) $\frac{1}{3} \times \frac{5}{6}$



3.3 **3.** Multiply. Estimate to check that the solutions are reasonable.

a) $\frac{3}{4} \times \frac{8}{9} = \frac{2}{3}$

b) $\frac{5}{16} \times \frac{4}{15} = \frac{1}{12}$

c) $\frac{7}{6} \times \frac{8}{21} = \frac{4}{9}$

4. Claude mowed $\frac{1}{4}$ of the lawn before lunch. After lunch he mowed $\frac{2}{3}$ of the uncut lawn.

What fraction of the lawn did Claude mow altogether? $\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$

Before he started mowing after lunch, Claude had $\frac{3}{4}$ of the lawn left to mow.

Claude mowed $\frac{3}{4}$ of the lawn altogether.

before lunch $\frac{1}{4} + \frac{1}{2} = \frac{3}{4}$ after lunch

3.4 **5.** Write each mixed number as an improper fraction.

a) $3\frac{3}{5} = \frac{18}{5}$

b) $4\frac{7}{8} = \frac{39}{8}$

c) $1\frac{11}{16} = \frac{27}{16}$

LESSON

6. Multiply.

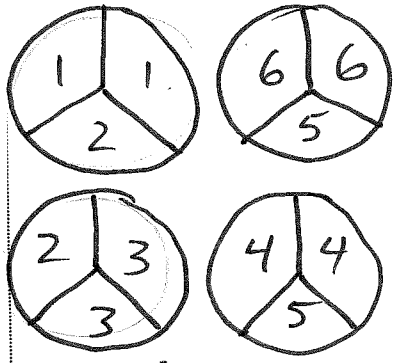
a) $3\frac{3}{8} \times 3\frac{1}{3} = \frac{45}{4} = 11\frac{1}{4}$ b) $2\frac{2}{5} \times 6\frac{2}{3} = \frac{16}{1} = 16$ c) $1\frac{5}{12} \times 2\frac{5}{8} = \frac{119}{32} = 3\frac{23}{32}$

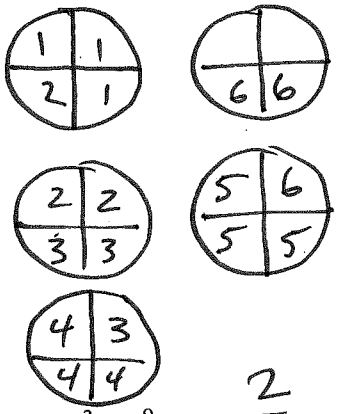
$\frac{27}{4} \times \frac{10}{3} = \frac{45}{4}$ $\frac{12}{15} \times \frac{20}{31}$ $\frac{17}{12} \times \frac{21}{8} = \frac{119}{32}$

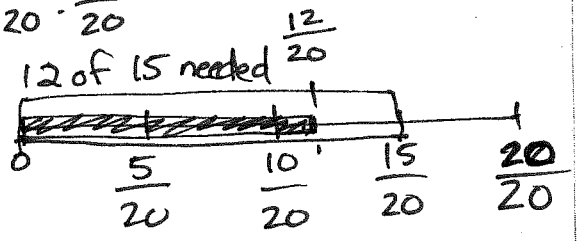
3.5 **7.** Use a model to determine each quotient.

a) $4 \div \frac{2}{3} = 6$ b) $5 \div \frac{3}{4} = 6\frac{2}{3}$ c) $\frac{3}{5} \div \frac{3}{4} = \frac{12}{15}$

$= \frac{12}{20} \div \frac{15}{20}$







3.6 **8.** Divide.

a) $\frac{5}{12} \div \frac{10}{11} = \frac{11}{24}$ b) $\frac{3}{7} \div \frac{9}{14} = \frac{2}{3}$ c) $\frac{3}{5} \div \frac{5}{6} = \frac{18}{25}$

$\frac{5}{12} \times \frac{11}{10} = \frac{11}{24}$ $\frac{3}{7} \times \frac{14}{9}$ $\frac{3}{5} \times \frac{6}{5} = \frac{18}{25}$

3.7 **9.** Divide. Estimate to check that the quotients are reasonable.

a) $2\frac{1}{4} \div 1\frac{7}{8} = \frac{6}{5} = 1\frac{1}{5}$ b) $1\frac{3}{4} \div 2\frac{4}{5} = \frac{5}{8}$ c) $3\frac{3}{4} \div 2\frac{1}{12} = \frac{9}{5} = 1\frac{4}{5}$

Est: $2 \div 2 = 1$ Est: $2 \div 3 = \frac{2}{3}$ Est $= 4 \div 2 = 2$

$\frac{9}{4} \div \frac{15}{8} = \frac{3}{1} \times \frac{8}{5}$ $\frac{7}{4} \div \frac{14}{5} = \frac{1}{4} \times \frac{5}{2}$ $\frac{15}{4} \div \frac{25}{12} = \frac{3}{1} \times \frac{12}{25} =$

10. A recipe for chocolate cake calls for $1\frac{1}{4}$ cups of chocolate chips. Hasim has $7\frac{1}{2}$ cups of chocolate chips. How many cakes can he make?

$7\frac{1}{2} \div 1\frac{1}{4}$

$\frac{15}{2} \div \frac{5}{4}$

$\frac{3}{1} \times \frac{4}{5} = \frac{6}{1} = 6$

Hasim can make 6 cakes.

LESSON

3.8 **11.** On Tuesday, $\frac{5}{12}$ of the grade 8 students attended the computer club meeting and $\frac{3}{8}$ of the grade 8 students attended the science club meeting. The meetings were at the same time. What fraction of the grade 8 students attended one of the meetings? What fraction did not attend either of the meetings?

$\frac{24}{24}$ = all students

$\frac{19}{24}$ of the grade 8 students attended one of the meetings. $\frac{5}{12} + \frac{3}{8} = \frac{10}{24} + \frac{9}{24}$

$\frac{5}{24}$ of the grade 8 students did not attend either of the meetings.

$\frac{24}{24} - \frac{19}{24} = \frac{5}{24}$

12. Grace has $6\frac{3}{4}$ L of maple syrup that she wants to pour into $\frac{3}{4}$-L containers. How many containers can she fill?

$6\frac{3}{4} \div \frac{3}{4}$

$\frac{27}{4} \div \frac{3}{4}$ → $\frac{9}{\cancel{27}} \times \frac{\cancel{4}^{1}}{\cancel{3}_{1}} = 9$ containers.

Grace can fill 9 containers.

3.9 **13.** Evaluate.

a) $\frac{3}{5} + \frac{\cancel{1}^{1}}{\cancel{15}_{5}} \times \frac{\cancel{3}^{1}}{\cancel{14}_{2}} =$ $\frac{9}{10}$

$\frac{3}{5} + \frac{3}{10}$

$\frac{6}{10} + \frac{3}{10} = \frac{9}{10}$

b) $\left(\frac{3}{5} + \frac{7}{15} \times \frac{9}{14}\right) =$ $\frac{9}{10}$

same

14. Evaluate: $\frac{4}{7} \times \left(\frac{9}{5} - \frac{3}{4}\right) \div \frac{3}{8} =$ _____

$\frac{4}{7} \times \left(\frac{36}{20} - \frac{15}{20}\right) \div \frac{3}{8}$

$\frac{\cancel{4}^{1}}{7} \times \frac{11}{\cancel{20}_{5}} \div \frac{3}{8}$

$\frac{11}{35} \div \frac{3}{8}$ → $\frac{11}{35} \times \frac{8}{3} = \frac{88}{105}$