

Section Overview



Estimating with Fractions

Lesson 3-7

Why? Estimation can be used to determine whether answers are reasonable.

Round each fraction in a sum or difference to a benchmark, and then add or subtract. To round, compare the numerator to the denominator.

$$\frac{9}{50} \text{ rounds to } 0.$$

The numerator is much smaller than the denominator.

$$\frac{9}{20} \text{ rounds to } \frac{1}{2}.$$

The numerator is about one half the denominator.

$$\frac{9}{11} \text{ rounds to } 1.$$

The numerator is close to the denominator.

Benchmarks are 0 , $\frac{1}{2}$, 1 , and so on.

Operations with Fractions

Lessons 3-8 through 3-11

Why? Operations with fractions arise in many real-world situations.

To add or subtract fractions, first write equivalent fractions with common denominators, and then add or subtract the numerators.

$$\begin{aligned} \frac{1}{3} + \frac{2}{5} \\ &= \frac{5}{15} + \frac{6}{15} \\ &= \frac{5+6}{15} \\ &= \frac{11}{15} \end{aligned}$$

Equivalent fractions with a **common denominator**

$$\begin{aligned} 5 - \frac{2}{3} \\ &= 4\frac{3}{3} - \frac{2}{3} \\ &= 4\frac{1}{3} \end{aligned}$$

Rewrite 5 as $4\frac{3}{3}$.

Division of fractions is defined in terms of multiplication, so it is important to be able to multiply fractions or mixed numbers before learning to divide fractions.

$$\frac{3}{4} \cdot \frac{3}{5} = \frac{3 \cdot 3}{4 \cdot 5} = \frac{9}{20}$$

Multiply the **numerators** and multiply the **denominators**.

$$\frac{5}{6} \div \frac{1}{3} = \frac{5}{6} \cdot \frac{3}{1} = \frac{5}{2} = 2\frac{1}{2}$$

Rewrite division by a fraction as **multiplication by its reciprocal**.

Solving Equations Containing Fractions

Lesson 3-12

Why? Equations can be used to represent real-world situations. Solving equations containing fractions enables you to solve many real-world problems.

To solve one-step equations with fractions, apply the rules for computing with fractions when isolating the variable with inverse operations.