Section Overview

Professional Development

Adding and Subtracting Fractions — Lesson 5-1, 5-2, 5-3

Why? Adding and subtracting fractions is necessary in many problems-solving situations.

To add or subtract unlike fractions, first rewrite them as equivalent fractions with a **common denominator**.

$$\frac{1}{6} + \frac{7}{10}$$
$$\frac{1 \cdot 5}{6 \cdot 5} + \frac{7 \cdot 3}{10 \cdot 3}$$
$$\frac{5}{30} + \frac{21}{30}$$
$$\frac{26}{30}$$
$$\frac{13}{15}$$

To find a **common denominator**, find the LCM of 6 and 10.

List the multiples.

6: 6, 12, 18, 24, **30**, . . .

10: 10, 20, **30**, . . .

Use prime factorization.

$6 = 2 \cdot 3$

$10 = 2 \cdot 5$

LCM $= 2 \cdot 3 \cdot 5 = 30$

Regrouping to Subtract Fractions — Lesson 5-4

Why? In order to solve fraction equations, you may need to regroup to subtract.

$$3\frac{1}{4} \longrightarrow 2\frac{5}{4}$$
$$-\ 1\frac{3}{4} \qquad -\ 1\frac{3}{4}$$
$$1\frac{2}{4}$$

Rename $3\frac{1}{4}$ as $2\frac{5}{4}$ in order to subtract the numerators.

Fraction Equations with Addition and Subtraction — Lesson 5-5

Why? Many equations that model real-world situations contain fractions.

Subtract $1\frac{3}{4}$ from both sides to undo the addition.

$$x + 1\frac{3}{4} = 3\frac{1}{4}$$
$$-\ 1\frac{3}{4} \quad -\ 1\frac{3}{4}$$
$$x = 1\frac{2}{4}$$
$$x = 1\frac{1}{2}$$