

## Lesson 6-1

### Example 1 Write Ratios in Simplest Form

**BOWLING** In an after-school bowling club there are 42 boys and 35 girls. Write the ratio comparing the number of boys to the number of girls as a fraction in simplest form.

$$\begin{aligned} 42 \text{ to } 35 &= \frac{42}{35} && \text{Write the ratio as a fraction.} \\ &= \frac{6}{5} && \text{Simplify.} \end{aligned}$$

Written as a fraction in simplest form, the ratio 42 to 35 is  $\frac{6}{5}$ .

### Example 2 Identify Equivalent Ratios

Determine whether 4:6 and 28:42 are equivalent.

Write each ratio as a fraction in simplest form.

$$\begin{aligned} 4:6 &= \frac{4 \div 2}{6 \div 2} \text{ or } \frac{2}{3} && \text{The GCF of 4 and 6 is 2.} \\ 28:42 &= \frac{28 \div 14}{42 \div 14} \text{ or } \frac{2}{3} && \text{The GCF of 28 and 42 is 14.} \end{aligned}$$

The ratios in simplest form both equal  $\frac{2}{3}$ . So, 4:6 and 28:42 are equivalent ratios.

### Example 5 Identify Equivalent Ratios

**PLAYGROUND** It is recommended that there should be 12 square feet of surface area for every 2 children playing on a playground. For a playground having 500 square feet of surface area, the number of children allowed on the playground at one time is posted as 100 children. Is this the correct number of children based on the above recommendation?

$$12 \text{ to } 2 \text{ or } \frac{12}{2} \text{ or } \frac{6}{1} \quad \text{Recommended ratio}$$

$$500 \text{ to } 100 \text{ or } \frac{500}{100} \text{ or } \frac{5}{1} \quad \text{Actual ratio}$$

Since  $\frac{6}{1} \neq \frac{5}{1}$ , the ratios are not equivalent.

So, the number of children allowed on the playground is not correct.

