# Ratios and Proportions

**Today I Can**

1. Write ratios and solve proportions.

**Ratio**

A comparison of two quantities by division. Denoted by

$$\frac{a}{b}, \quad a : b, \quad \text{and} \quad a \text{ to } b$$

**Example 1.**

(a) Members of the school band are buying pots of tulips and pots of daffodils to sell at their fundraiser. They plan to buy 120 pots of flowers. The ratio

$$\frac{\text{number of tulip pots}}{\text{number of daffodil pots}}$$

will be $\frac{2}{3}$. How many pots of each type of flower should they buy?

(b) The measures of two supplementary angles are in the ratio $1 : 4$. What are the measures of the angles?

**Extended Ratio**

A comparison of three (or more) numbers. Denoted by $a : b : c$

**Example 2.**

(a) The lengths of the sides of a triangle are in the extended ratio $3 : 5 : 6$. The perimeter of the triangle is 98 in. What is the length of the longest side?

(b) The angles of a triangle are in the ratio $2 : 3 : 4$. What are the measures of the angles?

**Proportion**

An equation with equal ratios.

**Example 3.** Solve each.

(a) $\frac{6}{x} = \frac{5}{4}$ (b) $\frac{9}{2} = \frac{a}{14}$ (c) $\frac{y+4}{9} = \frac{y}{3}$