

TOPIC: RATIOS AND RATES

Ratios

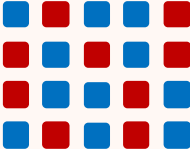
◆ Fractions can represent part of a whole, division, and **ratios** which _____ two quantities.

► Ratios can be written in three ways: 1 to 2 or $\frac{1}{2}$ or 1 : 2

New

Writing Ratios as Fractions

In an algebra class there are 9 women and 11 men

	9 women to 11 men or ____ or ____ : ____
	11 men to 9 women or ____ or ____ : ____

◆ When writing ratios as fractions, *always* write them in simplest form with _____ numbers.

EXAMPLE

Write each ratio as a fraction in simplest form.

(A) 4 oz to 14 oz

(B) $3\frac{1}{3}$ to $4\frac{1}{6}$

TOPIC: RATIOS AND RATES

PRACTICE

Express each ratio as a fraction in its simplest form.

(**A**) $198 : 12$

(**B**) $3.6 : 5.4$

(**C**) $1\frac{1}{2}$ to $2\frac{1}{4}$

PRACTICE

Express each ratio as a fraction in its simplest form.

(**A**) 8 meters to 14 meters

(**B**) 2.4 bags to $3\frac{1}{4}$ bags

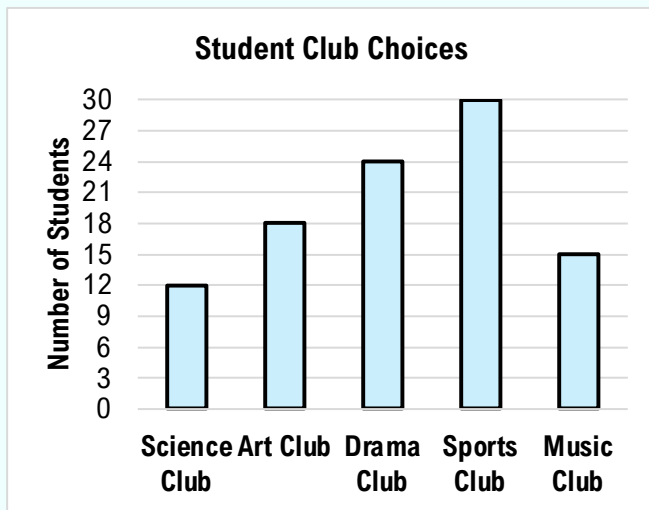
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EXAMPLE

A kite-shaped decoration has one diagonal measuring 24 ft and the other measuring 54 ft. Find the ratio of the shorter to the longer diagonal.

EXAMPLE

A teacher surveyed students about their favorite school club. The results are shown in the following bar graph:



a) What is the ratio of students who chose Science Club to Sports Club?

b) What is the ratio of students who chose Sports Club to the total number of students surveyed?

TOPIC: RATIOS AND RATES

Rates

- ◆ Recall: **Ratios** compare two quantities, often represented using a fraction.
 - ▶ When the units in a ratio are different they [**DO | DO NOT**] divide out (cancel).

New Rates	
	Unit Rate
A rate is a ratio comparing the two quantities with _____ units.	A unit rate is a rate with a denominator value of ____.
420 miles in 8 hours = _____ = _____	\$3600 for 6 weeks = _____ = _____

- ◆ Look for words like *per*, *for*, *on*, and *in* when identifying rates.

EXAMPLE

A store charges \$4.32 for a 16-ounce jar of salsa. What is the unit price in dollars per ounce?

TOPIC: RATIOS AND RATES

PRACTICE

Express each rate as a fraction and simplify.

(**A**) 14 cups of flour for every 21 cups of sugar

(**B**) 36 grams per 120 milliliters

PRACTICE

Express each rate as a unit rate.

(**A**) 84 miles in 3 hours

(**B**) 7 pounds of apples for \$21

EXAMPLE

A bookstore is selling notebooks in two packs. A pack of 5 notebooks costs \$18, while a pack of 8 notebooks costs \$27.20.

- Find the unit price of each deal.
- Which is the better buy?