

Warm-Up

Your purchase totals \$32.18, to find the sales tax use 0.075

How much was just the sales tax?

\$2.41

How much was the total sales?

$$\begin{array}{r} + 32.18 \\ \hline 34.59 \end{array}$$

$$\begin{array}{r} 32.18 \\ \times 0.075 \\ \hline 16090 \\ + 225260 \\ \hline 241350 \end{array}$$

Comments on Ch 4 Test

26) total

0.06
not part
of total

9-12)

Front End Rounding

82.01 → 80

5.1 Ratios

What is a ratio?

- a comparison between two quantities
- have same units

Writing Ratios (three options)

The ratio of \$7 to \$3 can be written as follows:

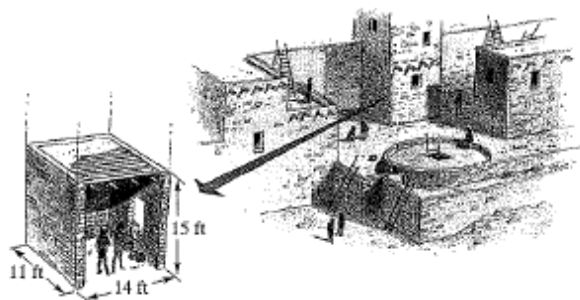
a) 7 to 3 b) 7:3 c) $\frac{7}{3}$

Example 1 Write as Fractions

a) Ratio of length to width

14^{ft} to 11^{ft} 

Ancestors of the Pueblo Indians built multistory apartment towns in New Mexico about 1100 years ago. A room might measure 14 ft long, 11 ft wide, and 15 ft high.



b) Ratio of width to height



Any ratio can be written as a fraction. Therefore you COULD write it in lowest terms.

Ex 2 Writing a ratio in lowest terms

a) 60 days to 20 days

$$\frac{60 \text{ days}}{20 \text{ days}} = \frac{60}{20} = \frac{3}{1}$$

b) 50 ounces of medicine to 120 ounces of medicine

$$\frac{50 \text{ oz}}{120 \text{ oz}} = \frac{50}{120} = \frac{5}{12}$$

Ex 3 Decimals in a Ratio

The price of a Sunday newspaper increased from \$1.50 to \$1.75. Find the ratio of the increase in price to the original price.

$$\$0.25 \text{ to } \$1.50$$

Fraction

$$\frac{\$0.25}{\$1.50} = \frac{25}{150} = \frac{1}{6}$$

Ex 4 Mixed Numbers in Ratios

Write each ratio as a comparison of whole numbers in lowest terms.

a) 2 days to $2\frac{1}{4}$ days

$$\frac{2}{2\frac{1}{4}} = 2 \div 2\frac{1}{4}$$

$$= \frac{2}{1} \div \frac{9}{4}$$

$$= \frac{2 \cdot 4}{1 \cdot 9} = \frac{8}{9}$$

b) $3\frac{1}{4}$ to $1\frac{1}{2}$

$$3\frac{1}{4} \div 1\frac{1}{2}$$

$$\frac{13}{4} \div \frac{3}{2}$$

$$\frac{13}{4} \cdot \frac{2}{3} = \frac{26}{12} = \frac{13}{6}$$

Ex 5 Ratios with Unit Measurement

a) Write the ratio of the length of the shorter board on the left to the length of the longer board on the right. Compare in inches.

$$12 \text{ in} \rightarrow 1 \text{ ft}$$

$$24 \text{ in} \rightarrow 2 \text{ ft}$$



Short to long
left to right
24 in to 30 in

$$\frac{24 \div 6}{30 \div 6} = \frac{4}{5}$$

b) Write the ratio of 28 days to 3 weeks

28 days to 21 days

$$\frac{28 \text{ days}}{21 \text{ days}} = \frac{28}{21} = \frac{4}{3}$$

Measurement Comparisons**Length**

1 foot = 12 inches

1 yard = 3 feet

1 mile = 5280 feet

Weight

1 pound = 16 ounces

1 ton = 2000 pounds

Capacity (Volume)

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

Time

1 minute = 60 seconds

1 hour = 60 minutes

1 day = 24 hours

1 week = 7 days