

Lesson 5-1

Example 1

ENGINEERING An engineer is using a steel scale; the smallest markings on the scale are $\frac{1}{32}$ ". What is the GPE of any measurement the engineer makes with the scale?

Solution

Find half of $\frac{1}{32}$: $\frac{1}{32} \div 2 = \frac{1}{64}$. The GPE is $\frac{1}{64}$ ".

Example 2

Change 23 feet to yards.

Solution

$$3 \text{ ft} = 1 \text{ yd}$$

Divide 23 by 3 to find how many yards are in 23 ft.

$$23 \div 3 = 7\frac{2}{3}$$

$$\text{So, } 23 \text{ ft} = 7\frac{2}{3} \text{ yd.}$$

Example 3

Change 4.328 kg to grams.

Solution

$$1 \text{ kg} = 1,000 \text{ g}$$

Multiply 4.328 by 1000 to find how many grams are in 4.328 kg.

$$(4.328)(1,000) = 4328$$

$$\text{So, } 4.328 \text{ kg} = 4328 \text{ g.}$$

Example 4

Write the ratio of measurements 6 in. to 18 ft in lowest terms.

Solution

$$\frac{6 \text{ in.}}{18 \text{ ft}}$$

Write the ratio as a fraction.

$$\frac{6 \text{ in.}}{18 \text{ ft}} = \frac{6 \text{ in.}}{216 \text{ in.}}$$

Rename the measurements using the same units.

$$\frac{6 \cdot 6}{216 \cdot 6} = \frac{1}{36}$$

Divide to write the fraction in lowest terms.

The ratio of measurements is 1 to 36.

Example 5

COST ANALYSIS A 10-oz box of Dog Treats cost \$1.60. A 16-oz box of Doggy Donuts sells for \$2.24. Which box is the better buy?

Solution

Write a ratio of price per weight for each product to find each unit price. Then compare prices.

$$\frac{1.60}{10} = \frac{0.16}{1} = 0.16$$

Dog Treats

$$\frac{2.24}{16} = \frac{0.14}{1} = 0.14$$

Doggy Donuts

□ □
unit unit
rate price

Dog Treats cost \$0.16-oz. Doggy Donuts costs \$0.14-oz. Dog Treats is the better buy.