

Units of Measure 15.1



Overview of problems

Example Set: A

Match the units of measure:

28 miles per hour

Time

16 meters/second²

Length

78 liters

Velocity

.03 microseconds

Acceleration

45 cm

Surface Area

109 ft²

Volume

State if the unit of measure is standard or metric. Also, state what concept is being measured; for example- time, distance, etc.

(note: additional research maybe needed to answer a question)

1. 600 square miles
2. 189 m/s
3. 47 g/l
4. 32 ft/sec²
5. 125,000 light years

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Overview of problems

Apply the formula for each problem and state the correct unit of measure for the solution.

1. Find the volume of the sphere with radius 2 cm. Volume of a sphere = $\frac{4}{3}\pi r^3$

2. How much force does a falling ball of 3 kg have?

Force = Mass x Acceleration note: acceleration = 9.8 m/s²

3. How fast in miles per hours (mph) did a car go if it traveled

150,000 feet in 20 min? Distance = Speed x Time

4. A square has an area of 144 inches squared; what is the length

of the side of the square? Area Square = side²

Example Set: B

Convert the units of measure- show all work:

1. 8 km is how many miles?

2. 13,570 seconds is how many hours?

3. 175 lbs is how many grams?

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4. 5 liters is how many gallons?
5. 92 mg is how many grams?
6. .3 ml is how many liters?



Example Set: A-**ANSWER KEY**

Match the units of measure:

28 miles per hour	Velocity	Time
16 meters/second ²	Acceleration	Length
78 liters	Volume	Velocity
.03 microseconds	Time	Acceleration
45 cm	Length	Surface Area
109 ft ²	Surface Area	Volume

**State if the unit of measure is standard or metric. Also, state what concept is being measured; for example- time, distance, etc.
(note: additional research maybe needed to answer a question)**

1. 600 square miles **Standard/ Area or Surface Area**

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2. 189 m/s **Metric / Velocity or Speed**
3. 47 g/l **Metric / Density**
4. 32 ft/sec^2 **Standard / Acceleration**
5. $125,000 \text{ light years}$ **Standard or Metric / Distance**

Apply the formula for each problem and state the correct unit of measure for the solution.

1. Find the volume of the sphere with radius 2 cm. Volume of a sphere = $\frac{4}{3}\pi r^3$

$$V = \frac{32\pi}{3} \text{ cm}^3$$

2. How much force does a falling ball of 3 kg have?

Force = Mass x Acceleration note: acceleration = 9.8 m/s^2

$$F = 29.4 \text{ kg m/s}^2 \text{ Newtons}$$

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3. How fast in miles per hours (mph) did a car go if it traveled

150,000 feet in 20 min? $Distance = Speed \times Time$

$$Speed/Velocity = 86.06 \text{ mph}$$

4. A square has an area of 144 inches squared; what is the length

of the side of the square? $Area \text{ Square} = side^2$

$$Side \text{ Length} = 12 \text{ inches}$$



Example Set: B-ANSWER KEY

Convert the units of measure- show all work:

1. 8 km is how many miles? **4.97 miles**
2. 13,570 seconds is how many hours? **3.769 hours**
3. 175 lbs is how many grams? **79,378.25 grams**
4. 5 liters is how many gallons? **1.319 gallons**

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5. *92 mg is how many grams? .092 grams*

6. *.3 ml is how many liters? .0003 Liters*