Dimensional Analysis Scavenger Hunt

show all work for full credit!

Start!

Turn over!

Dimensional Analysis Scavenger Hunt
show all work for full credit!

Cont...

End!

The Mackinac Bridge connects the upper & lower peninsulas of Michigan. It is approximately 805,000 centimeters long. How many miles is this?

Conversion factors

1 hour = 60 min	1 min = 60 seconds	1 ton = 2,000 lbs	7 days = 1 week
24 hours = 1 day	1 kg = 2.2 lbs	1 gal = 3.79 L	264.2 gal = 1 m³
1 mile = 5,280 feet	1 kg = 1,000 g	1 lb = 16 ounces	20 drops = 1 mL
365 days = 1 year	52 weeks = 1 year	2.54 cm = 1 inch	1 L = 1,000 mL
0.621 mi = 1.0 km	1 yard = 36 inches	1 cc = 1 cm³	1 mL = 1 cm³

The Top Thrill Dragster, a rollercoaster at Cedar Point in Ohio, soars through the air at 176 ft/sec. How fast is this in mph?

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The Space Needle in Seattle, Washington is 184.0 meters high. The Willis Tower in Chicago, Illinois is 1,451.0 feet high. How many kilometers higher is the Willis Tower than the Space Needle?

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Hint! Take the square of the conversion factor before you solve.

$(1 \text{ km}/.621\text{mi})^2$

The area of the Grand Canyon is 1,902 mi². What is the area of the Grand Canyon in km²?

Conversion factors

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Hint! This is a problem-solving problem. First convert 30 min into seconds then use the conversion factor below to solve for liters:

303,200 liters
90 seconds

Then convert liters into gallons

One of the attractions at Typhoon Lagoon, a water park in Florida, is a surf pool. 303,200.0 liters of water are used for each wave in the surf pool & waves are generated every 90 seconds. How many gallons of water are used every 30 minutes in the surf pool?

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Hint! Take the cube of the conversion factor before you solve.

$$(.621 \text{ mi}/ 1 \text{ km})^3$$

If the Yellowstone Supervolcano were to erupt, it would be a magnitude of 8 on the Volcano Explosivity Index. This indicates an eruption of more than 1,000.0 cubic kilometers of magma. How many cubic miles is this?

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Previous Answer:
239.48

The Georgia Aquarium is home to 4 whale sharks. The average mass of a whale shark is 20.6 tons. What would be the total mass of all the whale sharks in pounds?

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Route 66, one of the most famous roads in America, starts in Chicago & stops in Los Angeles. The length of route 66 is approximately 3,945,000 meters. How many miles long is Route 66?

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The height of Mount Rushmore is 59.00 feet. What is the height of Mount Rushmore in centimeters?

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The reflecting pool in Washington D.C. contains nearly 6,750,000.0 gallons of water & provides mirror images of the Washington Monument & the Lincoln Memorial. How many quarts does the reflecting pool contain?

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Hint! This is a combination unit problem!

$$\frac{300 \text{ in}}{1 \text{ year}} \rightarrow \frac{\text{cm}}{\text{decade}}$$

Colorado, on average, gets more than 300.0 inches of snow each year. How many centimeters of snow does Colorado get in a decade?

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$\dfrac{1,425.8 \text{ mi}}{20.75 \text{ hr}}$ → $\dfrac{\text{ft}}{\text{min}}$

The distance from Boston, Massachusetts to Little Rock, Arkansas is 1,452.8 miles. How many ft/min would you have to drive to get there in 20.75 hours ?

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