

Name: _____

Regents Physics

Dimensional Analysis (Unit Conversion) Worksheet

Use the “railroad track method” to solve the following problems.

(Express all answers in Scientific Notation)

Solve using the conversion factors given in the problem, or using previous knowledge.

How many seconds old are you?

A person’s weight is 154 pounds. Convert this to kilograms. (1 lbs. = 0.454 kilograms)

An aspirin tablet contains 0.325 g of acetaminophen. How many grains is this equivalent to? (1 gram = 15.432 grains)

Solve using the conversion factors that are listed in the table below.

Your cruise ship is leaving for a 610-league adventure. How many nautical miles is this?

Later the ship is discovered at 38 fathoms deep under water. Convert this to meters.

Fortunately you survived! You are stranded on a deserted island that is located 12.5 degrees north of the equator. How many kilometers is this?

If you are rationed to 32 gills of fresh water a day. How many liters is this?

To reach the top of a palm tree for a coconut you will have to climb 7.4 meters. How many hands is this?

Table of Weights and Measures

		Volume
Length	Mass	
1 nautical mile = 6076.11549 feet		
1 inch = 2.54 cm	1 kg = 1000 g	4 gills = 1 pint
1 league = 5 280 yards	1 g = 1000 mg	2 pints = 1 quart
1 cable = 120 fathoms		1 liter = 1.0567 quarts
1 fathom = 6 feet		1 bushel = 4 pecks = 32 quarts
1 degree = 69.047 miles		1 gallon = 4 quarts
1 mile = 5280 feet		
1 hand = 4 inches		

1 meter = 100 cm

1 yard = 3 feet

1 kilometer = 1000 meters

1 foot = 12 inches

Use the information below to figure out the conversion.

You travel to the Planet Conversionia to work with their scientists. But, they have a different system than our International System. The scientists need a box that has to be 55 gnuffles high.

But you only have a meter stick, so they give you the conversion chart below. Using ONLY dimensional analysis, find out the height of the box in meters. (Answer in Scientific Notation)

1 meter = 46 squats

2 squat = 50 doodles

7 doodle = 9 beavii

1 beavii = 10 nuggles

5 nuggle = 9 snerts

2 snert = 95 yuks

49 yuk = 4 gnuffles

\