

Dimensional Analysis Worksheet

Refer to the “Dimensional Analysis Fact Sheet.”

- How many inches are there in a football field?
- How many feet are there in a mile?
- How many yards are there in a mile?
- How many yards are there in a soccer field?
- How many feet are there in a furlong?
- How many paces make up a football field?
- How many paces make up a furlong?
- How many fathoms is a 20 foot deep diving well?
- Every 75 feet down a scuba diver goes makes him feel like he has had a martini. How many fathoms is this?
- How many feet are between the first and second floor of a building (one story)?
- How many parsecs make up a light year?
- How many rods make up a mile?
- How many centimeters are in a fathom?
- How many seconds are in a year?
- How many hours are in a fortnight?
- The average life span of a tortoise is 200 years. How many scores is this?
- A housefly’s life span is 3 days. How many minutes is this?
- *If a person blinks their eyes once every 3 minutes on the average, then how many times do they blink their eye in a day?
- How many grams are in a pound?
- How many poundals are in a pound?
- How many pounds are in a metric ton?
- A typical locomotive weighs 40,000 tons. How many drams is this?
- *A typical car manufactured in 1974 weighs 4000 pounds. How many McDonald’s Quarter Pounders™ is this? If the Quarter Pounder™ costs \$0.65 in 1974 and the car costs \$6000, then which is cheaper the car or the car’s weight in Quarter Pounders™?
- *What is the speed of a car in feet/second that is traveling at 60 miles/hour?
- *The space shuttle travels at 28,000 mph while orbiting the Earth. How far does the shuttle travel in feet in the blink of an eye?

Dimensional Analysis Fact Sheet

DISTANCE UNITS Parsec = 1.91738×10^{13} miles Furlong = $\frac{1}{8}$ mile (exactly) Rod = Pearch (exactly) Rod = 16.5 links (exactly) Football field = 100 yards (exactly) Soccer field = 100 meters (exactly) Rod = $5\frac{1}{2}$ yards (exactly) Fathom = 6 feet (exactly) Yard = 3 feet (exactly) Foot = 12 inches (exactly) Inch = 2.54 centimeters (exactly) Centimeter = 10 millimeters (exactly) Decimeter = 10 centimeters (exactly) Meter = 100 centimeters (exactly) Dekameter = 10 meters (exactly) Walking Pace (avg) = 22.00 inches Story on a building = $3\frac{1}{3}$ meters Light year = 9.467×10^{15} meters Barn = 10^{-24} meters (exactly) League = 3 miles (exactly) 1 mile = 5280 feet (exactly) 1 kilometer = 1000 meters (exactly) 1 cubit = 25.00 inches 1 cubit = 2.08333 ft $1 \text{ cubit}^2 = 4.34027777 \text{ ft}^2$ $1 \text{ cubit}^3 = 9.042245 \text{ ft}^3$	TIME UNITS Millennium = 1000 years (exactly) Century = 100 years (exactly) Decade = 10 years (exactly) Year = 365.25 days Day = 24 hours (exactly) Hour = 60 minutes (exactly) Minute = 60 seconds (exactly) Blink of an eye = $\frac{1}{10}$ second Fortnight = 14 days (exactly) Score = 20 years (exactly)
	WEIGHTS AND METRIC MASSES Pound = 16 ounces (exactly) Ton = 2000 pounds (exactly) Tonne = 1000 kilograms (metric ton) (exactly) Gram = 1000 milligrams (exactly) Kilogram = 1000 grams (exactly) Kilogram = 2.2 pounds Poundal = 14.09808 grams Dram = 60 grains (exactly) Grain = 64.8 milligrams
	VOLUME MEASUREMENTS 1 liter = 1000 milliliters (exactly) 2 liters = 64.75 ounces 1 gallon = 128 ounces (exactly) 1 milliliter = 1 cm^3 (exactly) 1 milliliter = 20 drops (exactly)