

Dimensional Analysis with Combination Units

A car is driving at 105 km/h. What is this speed in mi/h?

1 mile (mi) = 1.609 kilometers (km)

The density of Gold is 19.3 g/cm^3 . What is this in oz/in^3 ?

1 ounce (oz) = 28.35 grams (g)

1 cubic inch (in^3) = 16.39 cubic centimeters (cm^3)

A gourmet chocolate sells for \$2.50 per ounce in the US. You want to sell it in bulk in Japan. What will it cost in Yen per kilogram?

Practice Problems:

1. How many inches are there in a football field (100 yards)? 1 yard = 3 feet; 1 foot = 12 inches)
2. How many seconds old are you?
3. The heartbeat rate for a typical adult is about 70 beats per 1 minute. How many beats would that amount to in one year?
4. A car is going 10 miles per hour, how fast is that in km/min (1.6 km = 1 mile, 60 min = 1 hour)
5. Traveling at 65 miles/hour, how fast is that in feet/minute? (1 mile = 5280 feet)

Dimensional analysis Kahoot!

1. How many pounds are 32 ounces of bananas? (1 pounds = 16 ounces)
2. How many drops are there in a 2 L beaker of vinegar? ($1\text{ L} = 1000\text{ ml}$, $1\text{ drops} = .05\text{ mL}$)
3. The gestation period for an elephant is 3.5 years how long is that in hours?
4. A black widow spider can eat 15 ants every 3 min. How many ants will she consume in 20 minutes?
5. If a dolphin swims 2,100 m/day, what is this in miles/week? ($1609\text{ m} = 1\text{ mile}$, $7\text{ days} = 1\text{ week}$)
6. CaCl cost \$12.00 for 8 ml. How many L CaCl can you get for \$120.00? ($1000\text{ ml} = 1\text{ L}$)
7. Lions eat 6 wildebeest every 3 weeks. How many wildebeest will pride consume in 13 weeks?