

Extra Dimensional Analysis

Aug 23, 2022

1) Convert the following:

a) 32.5 dag to its equivalent in cg.

b) 44 mm to nm.

c) 25 cm^3 to L.

d) 2.89 GJ to MJ.

e) $172 \mu\text{s}$ to ds.

2) A sample of air contains 2.33×10^{-4} mg of lead per mL of gas. This air passes through an office, the volume of which is 3.25×10^4 L. Seven people normally work in this office. How many μg of lead will each person in the office receive from this sample of air?

3) If a laser beam fired from the moon takes 1.40s to reach Earth, what is the distance in meters between the moon and Earth? Light travels in a vacuum at a speed of 3.00×10^{10} cm per second.

4) Amoxicillin is an antibiotic commonly used to treat bacterial infections. When given to infants, the dosage must be carefully determined. The usual daily dosage for infants under 3 months old is 30.0 milligrams (mg) per kilogram (kg) of body weight. What mass of amoxicillin in milligrams should be given to an 8.00 lb infant in one day? ($1 \text{ kg} = 2.205 \text{ lb}$)