Extra Dimensional Analysis

Aug 23, 2022

1) Convert the following:

a) 32.5 dag to its equivalent in cg.

325 cg

b) 44 mm to nm.

4.4×10^7

c) 25 cm^3 to L.

0.025 L

d) 2.89 GJ to MJ.

2,890 MJ

e) 172 μs to ds.

0.00172 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?

$1.08 \times 10^6 \mu$g/person

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.

4.20×10^8

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 kg = 2.205 lb)

109 mg