KEY

Metric – Metric Conversions Homework

Directions: On a separate sheet of paper, complete the following. Place you answer in **both standard form and scientific notation**. Remember sig figs.

1. Convert 5.36 kg to mg Kg → g → mg

$5.36\,\text{Kg} \times \frac{1000\,\text{g}}{1\,\text{Kg}} \times \frac{1000\,\text{mg}}{1\,\text{g}} = 5360000\,\text{mg}$ or $5.36 \times 10^{6}\,\text{mg}$

2. How many milliliters are there in 4.00 liters? L → mL

$4.00\,\text{L} \times \frac{1000\,\text{mL}}{1\,\text{L}} = 4000\,\text{mL}$ or $4.00 \times 10^{3}\,\text{mL}$

3. Mr. Jenks held his breath one time for 3.56 minutes. How many days did he hold it for? min → hrs → days

$3.56\,\text{min} \times \frac{1\,\text{hr}}{60\,\text{min}} \times \frac{1\,\text{day}}{24\,\text{hrs}} = 0.00247\,\text{days}$ or $2.47 \times 10^{-3}\,\text{days}$

4. If I ran 96700 mm, how many meters did I run? mm → m

$96700\,\text{mm} \times \frac{1\,\text{m}}{1000\,\text{mm}} = 96.7\,\text{m}$ or $9.67 \times 10^{1}\,\text{m}$

5. Convert 7.8 L to mL L → mL

$7.8\,\text{L} \times \frac{1000\,\text{mL}}{1\,\text{L}} = 7800\,\text{mL}$ or $7.8 \times 10^{3}\,\text{mL}$

6. The distance from the Earth to the Sun is 1.50×10^{9} km. How many millimeters is that? Km → m → mm

$1.50 \times 10^{9}\,\text{km} \times \frac{1000\,\text{m}}{1\,\text{km}} \times \frac{1000\,\text{mm}}{1\,\text{m}} = 1.50 \times 10^{15}\,\text{mm}$

7. Tarzan was bragging to Jane that he lifted a branch that was 34100 g. How many milligrams did Tarzan lift? g → mg

$34100\,\text{g} \times \frac{1000\,\text{mg}}{1\,\text{g}} = 34100000\,\text{mg}$ or $3.41 \times 10^{7}\,\text{mg}$

8. Convert 56.1 weeks to minutes. week → days → hrs → min

$56.1\,\text{weeks} \times \frac{7\,\text{days}}{1\,\text{week}} \times \frac{24\,\text{hrs}}{1\,\text{day}} \times \frac{60\,\text{min}}{1\,\text{hr}} = 565488\,\text{min}$

$565000\,\text{min}$ or $5.65 \times 10^{5}\,\text{min}$

KEY

Metric – English Conversions Homework

Directions: On a separate sheet of paper, complete the following. Place you answer in **both standard form and scientific notation.** Remember sig figs.

1. Convert 45.2 g to lbs $g \rightarrow lbs$

$$45.2\,g \times \frac{1\,lbs}{454\,g} = 0.0996\,lbs \text{ or } 9.96 \times 10^{-2}\,lbs$$

2. You ran a total of 8910 yards. How many meters did you run? $yds \rightarrow ft \rightarrow in \rightarrow cm \rightarrow m$

$$8910\,yds \times \frac{3\,ft}{1\,yd} \times \frac{12\,in}{1\,ft} \times \frac{2.54\,cm}{1\,in} \times \frac{1\,m}{100\,cm} = 8150\,m \text{ or } 8.15 \times 10^{3}\,m$$

3. You drink 9.32 quarts of Gatorade. How many milliliters did you drink? $qt \rightarrow mL$

$$9.32\,qt \times \frac{946\,mL}{1\,qt} = 8820\,mL \text{ or } 8.82 \times 10^{3}\,mL$$

4. An Olympic sized swimming pool contains about 6.6 X 10^5 gallons of water. How many liters is that? $gal \rightarrow qts \rightarrow mL \rightarrow L$

$$6.6 \times 10^{5}\,gal \times \frac{4\,qts}{1\,gal} \times \frac{946\,mL}{1\,qt} \times \frac{1\,L}{1000\,mL} = 2500000\,L \text{ or } 2.5 \times 10^{6}\,L$$

5. Convert 4.56 km to miles $Km \rightarrow m \rightarrow cm \rightarrow in \rightarrow ft \rightarrow mi$

$$4.56\,Km \times \frac{1000\,m}{1\,Km} \times \frac{100\,cm}{1\,m} \times \frac{1\,in}{2.54\,cm} \times \frac{1\,ft}{12\,in} \times \frac{1\,mi}{5280\,ft} = 2.83\,mi \text{ or } 2.83 \times 10^{0}\,mi$$

6. The Earth has a mass of 5.972 X 10^{24} kg. What is that mass in lbs?

$kg \rightarrow g \rightarrow lbs$

$$5.972 \times 10^{24}\,kg \times \frac{1000\,g}{1\,kg} \times \frac{1\,lb}{454\,g} = 1.315 \times 10^{25}\,lbs$$

7. There are 45 miles of nerves in the human body. How many meters is that?

$mi \rightarrow ft \rightarrow in \rightarrow cm \rightarrow m$

$$45\,mi \times \frac{5280\,ft}{1\,mi} \times \frac{12\,in}{1\,ft} \times \frac{2.54\,cm}{1\,in} \times \frac{1\,m}{100\,cm} = 72000\,m \text{ or } 7.2 \times 10^{4}\,m$$

8. On October 16, 1964 (49 years ago) China detonated its first atomic bomb. How many hours ago did this event in history happen? $yrs \rightarrow days \rightarrow hrs$

$$49\,yrs \times \frac{365\,days}{1\,yr} \times \frac{24\,hrs}{1\,day} = 430000\,hrs \text{ or } 4.3 \times 10^{5}\,hrs$$