

Metric Conversions Homework – Show all work for full credit!

State the following measured quantities in the units indicated. Place answer on line.

1. 5.2 cm of magnesium ribbon in millimeters: _____

2. 0.049 kg of sulfur in grams: _____

3. 1.60 mL of ethanol in microliters: _____

4. 0.0025 g of vitamin A in micrograms: _____

5. 0.020 kg of tin in milligrams: _____

6. 150 mg of aspirin in grams: _____

7. 2500 mL of hydrochloric acid in liters: _____

8. 35 mm in centimeters: _____

9. 500,000 μg in kilograms: _____

10. 8740 m in kilometers: _____

Metric Conversions Class Problems

a. 20 mm = _____ m.

i. 320 mg = _____ kg

b. 3×10^4 m = _____ km

j. 3 km = _____ cm

c. 2.8×10^9 pg = _____ g

k. 2.3×10^{12} fL = _____ μ L

d. 9.1×10^4 μ L = _____ L

l. 3.8 Mm = _____ Gm

e. 700 g = _____ ng

m. 8.2×10^8 nm = _____ cm

f. 550 mL = _____ cc

n. 155 cm = _____ inches

g. 220 cm^2 = _____ m^2

o. 20 mm^3 = _____ cm^3

h. 20 mm^3 = _____ cm^3

p. 6 m^3 = _____ dL

Metric Conversions Homework – Show all work for full credit!

Key

State the following measured quantities in the units indicated. Place answer on line.

1. 5.2 cm of magnesium ribbon in millimeters: 52 mm

$$\frac{5.2 \text{ cm}}{100 \text{ cm}} \times \frac{1 \text{ m}}{1 \text{ m}} \times \frac{1000 \text{ mm}}{1 \text{ m}} =$$

or

$$\frac{5.2 \text{ cm}}{1 \text{ cm}} \times \frac{10 \text{ mm}}{1 \text{ cm}} =$$

2. 0.049 kg of sulfur in grams: 49 g

$$\frac{0.049 \text{ kg}}{1 \text{ kg}} \times \frac{1000 \text{ g}}{1 \text{ kg}} =$$

3. 1.60 mL of ethanol in microliters: ~~1.60~~ 1600 μL

$$\frac{1.60 \text{ mL}}{1000 \text{ mL}} \times \frac{1 \text{ L}}{1 \text{ L}} \times \frac{10^6 \text{ } \mu\text{L}}{1 \text{ L}} =$$

4. 0.0025 g of vitamin A in micrograms: 2500 μg

$$\frac{0.0025 \text{ g}}{1 \text{ g}} \times \frac{10^6 \text{ } \mu\text{g}}{1 \text{ g}} =$$

5. 0.020 kg of tin in milligrams: 20 000 mg

$$\frac{0.020 \text{ kg}}{1 \text{ kg}} \times \frac{1000 \text{ g}}{1 \text{ kg}} \times \frac{1000 \text{ mg}}{1 \text{ g}} =$$

6. 150 mg of aspirin in grams: 0.15 g

$$\frac{150 \text{ mg}}{1000 \text{ mg}} \times \frac{1 \text{ g}}{1 \text{ g}} =$$

7. 2500 mL of hydrochloric acid in liters: 2.5 L

$$\frac{2500 \text{ mL}}{1000 \text{ mL}} \times \frac{1 \text{ L}}{1 \text{ L}} =$$

8. 35 mm in centimeters: 3.5 cm

$$\frac{35 \text{ mm}}{10 \text{ mm}} \times \frac{1 \text{ cm}}{1 \text{ cm}} =$$

or

$$\frac{35 \text{ mm}}{1000 \text{ mm}} \times \frac{1 \text{ m}}{1 \text{ m}} \times \frac{100 \text{ cm}}{1 \text{ m}} =$$

9. 500,000 μg in kilograms: $5 \times 10^{-4} \text{ kg}$

$$\frac{500,000 \text{ } \mu\text{g}}{10^6 \text{ } \mu\text{g}} \times \frac{1 \text{ g}}{1 \text{ g}} \times \frac{1 \text{ kg}}{1000 \text{ g}} =$$

10. 8740 m in kilometers: 8.74 km

$$\frac{8740 \text{ m}}{1000 \text{ m}} \times \frac{1 \text{ km}}{1 \text{ km}} =$$

Metric Conversions Class Problems

Key

a. 20 mm = .02 m.

i. 320 mg = 3.2×10^{-4} kg

$$\frac{320 \text{ mg}}{1000 \text{ mg}} \times \frac{1 \text{ kg}}{1000 \text{ g}}$$

b. 3×10^4 m = 30 km

$$\frac{3 \times 10^4 \text{ m}}{1000 \text{ m}} = 30 \text{ km}$$

j. 3 km = 300000 cm

c. 2.8×10^9 pg = .0028 g

k. 2.3×10^{12} fL = 2300 μ L

d. 9.1×10^4 μ L = .091 L

l. 3.8 Mm = .0038 Gm

e. 700 g = 7×10^{11} ng

m. 8.2×10^8 nm = 82 cm

f. 550 mL = 550 cc

n. 155 cm = 61.0 inches

g. 220 cm^2 = .022 m^2

o. 20 mm^3 = .02 cm^3

h. 20 mm^3 = .02 cm^3

p. 6 m^3 = ~~.006~~ 60000 dL