

**WS 2.4 Unit Conversions and the Metric System!**

**Name:** \_\_\_\_\_ *p.* \_\_\_\_\_

<u>Metric Prefix</u>	<u>Symbol</u>	<u>Meaning</u>
Mega-	M	_____
kilo-	k	_____
deci-	d	_____
centi-	c	_____
milli-	m	_____
micro-	$\mu$	_____
nano-	n	_____

Other Conversions

- 1 inch = 2.54 cm (exactly)
- 1 foot = 12 inches (exactly)
- 1 hour = 60 minutes (exactly)
- 1 minute = 60 seconds (exactly)
- 1 mile = 5280. feet
- 1 mile = 1.61 km
- 1 pound = 453.6 grams
- 1 mL = 1 cm<sup>3</sup> (exactly)

**YOU MUST SHOW ALL UNIT FACTORS TO RECEIVE CREDIT!!!**

**1.** Fill out the above chart!

**2.** Make the following conversions:

**a.** 77 nanometers (nm) into millimeters (mm)

**b.** 0.0491 centigrams (cg) into micrograms ( $\mu$ g)

**c.** 0.44 nanometers (nm) into centimeters (cm)

**d.** 62.3 millimeters(mm) to centimeters(cm)

**e.**  $3.3 \times 10^{-13}$  kilograms (kg) into nanograms (ng)

**f.** 0.0023 MegaWatts (MW) into kiloWatts (kW)

**3.** Make the following conversions:

**a.** 500. milligrams (mg) to grams (g)

**b.** 40 kilometers (km) to meters (m)

**c.** 2450 micrograms ( $\mu$ g) to grams

**d.** 0.0444 meters (m) to nanometers (nm)

**e.** 562 grams into kilograms

4. A piece of paper has an area of 93.5 square inches.

a. Convert this area into square feet:

b. Convert this area into square centimeters:

5. Convert a volume of  $43700 \text{ cm}^3$  into cubic feet.

6a. Iron has a density of 7.86 grams per  $\text{cm}^3$  ( $\text{g}/\text{cm}^3$ )

Convert this density into pounds per cubic foot. ( $\text{lbs}/\text{ft}^3$ )

b. A car is moving at a speed of 1400 meters per minute. Convert this speed to miles per hour.

c. A drug is being administered by IV at a rate of 85.0 micrograms per hour ( $\mu\text{g}/\text{hr}$ ).

Convert this into milligrams per day ( $\text{mg}/\text{day}$ ).

d. A quilt is being made at a rate of 4.0 square inches per hour. ( $\text{in}^2/\text{hr}$ ).

Convert this rate into square centimeters per minute ( $\text{cm}^2/\text{min}$ )