

Name: _____

Directions – Fill in the missing information from the various tables and equations.

SI Base Units

Quantity	Unit	Symbol
Length	meter	m
Mass	Kilogram	Kg
Temperature	kelvin	K
Time	second	s
Amount of Substance	mole	mol
Electric current	ampere	A
Luminous intensity	candela	cd

Temperature Conversion Equations

$$^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32)$$

$$^{\circ}\text{F} = \frac{9}{5} (^{\circ}\text{C}) + 32$$

$$\text{K} = ^{\circ}\text{C} + 273$$

Derived Units

Quantity	Unit	Symbol
Area	square meter	m ²
Volume	cubic meter	m ³
Density	kilograms per cubic meter	kg/m ³
Pressure	pascal (kg/m•s ²)	Pa
Energy	joule (kg•m ² /s ²)	J
Frequency	hertz (1/s)	Hz
Electric charge	coulomb (A•s)	C

SI Prefixes

Prefix	Symbol	Meaning	Multiply Unit by
giga -	G	billion (10 ⁹)	1,000,000,000
mega -	M	million (10 ⁶)	1,000,000
kilo -	k	thousand (10 ³)	1000
deci -	d	tenth (10 ⁻¹)	0.1
centi -	c	hundredth (10 ⁻²)	0.01
milli -	m	thousandth (10 ⁻³)	0.001
micro -	μ	millionth (10 ⁻⁶)	0.000001
nano -	n	billionth (10 ⁻⁹)	0.000000001

Directions – Use the information from the various tables to answer the following questions.

Convert the following metric measurements:

$1000 \text{ mg} = \underline{1} \text{ g}$

$198 \text{ g} = \underline{0.198} \text{ Kg}$

$8 \text{ mm} = \underline{0.8} \text{ cm}$

$160 \text{ cm} = \underline{1,600} \text{ mm}$

$75 \text{ mL} = \underline{0.075} \text{ L}$

$6.3 \text{ cm} = \underline{63} \text{ mm}$

$109 \text{ g} = \underline{0.109} \text{ Kg}$

$50 \text{ cm} = \underline{0.50} \text{ m}$

$5.6 \text{ m} = \underline{560} \text{ cm}$

$250 \text{ m} = \underline{0.250} \text{ Km}$

$5 \text{ L} = \underline{5,000} \text{ mL}$

$26,000 \text{ cm} = \underline{260} \text{ m}$

$14 \text{ Km} = \underline{14,000} \text{ m}$

$16 \text{ cm} = \underline{160} \text{ mm}$

$56,500 \text{ mm} = \underline{0.0565} \text{ Km}$

$1 \text{ L} = \underline{1,000} \text{ mL}$

$65 \text{ g} = \underline{65,000} \text{ mg}$

$27.5 \text{ mg} = \underline{0.0275} \text{ g}$

$480 \text{ cm} = \underline{4.8} \text{ m}$

$2500 \text{ m} = \underline{2.5} \text{ Km}$

$923 \text{ cm} = \underline{9.23} \text{ m}$

$27 \text{ g} = \underline{0.027} \text{ kg}$

$355 \text{ mL} = \underline{0.355} \text{ L}$

$0.025 \text{ Km} = \underline{2,500} \text{ cm}$

How many meters are in 265 giga-meters? (Write your answer in standard form and scientific notation)

$265,000,000,000$

$2.65 \times 10^{11} \text{ m}$

How many kilograms are in 432 micro-grams? (Write your answer in standard form and scientific notation)

~~0.000432~~

0.000432 g

0.000000432 kg
 $4.32 \times 10^{-7} \text{ kg}$

How many seconds are in 98 giga-seconds? (Write your answer in standard form and scientific notation)

$98,000,000,000 \text{ s}$

$9.8 \times 10^{10} \text{ s}$

How many milliseconds are in 682 kilo-seconds? (Write your answer in standard form and scientific notation)

$682,000 \text{ s}$

$6.82 \times 10^8 \text{ ms}$

$682,000,000 \text{ ms}$

How many mega-meters are in 25 nano-meters? (Write your answer in standard form and scientific notation)

0.000000025 m

$0.000000000000000025 \text{ Mm}$

2.5×10^{-14}

How many deci-grams are in 212 micro-grams? (Write your answer in standard form and scientific notation)

0.000212 g

$2.12 \times 10^{-4} \text{ dg}$

0.00212 da

Directions – Convert the following temperatures (Hint – some conversions might require multiple steps)

56 C to F

$$^{\circ}\text{F} = \frac{9}{5}(56) + 32 \quad ^{\circ}\text{F} = 132.8$$

56 F to C

$$^{\circ}\text{C} = \frac{5}{9}(56 - 32) \quad ^{\circ}\text{C} = 13.3$$

23 C to K

$$\text{K} = 23 + 273 \quad \text{K} = 296$$

260 K to C

$$260 = ^{\circ}\text{C} + 273 \quad ^{\circ}\text{C} = -13$$

56 F to K

$$^{\circ}\text{C} = \frac{5}{9}(56 - 32) \quad \text{K} = 13.3 + 273$$

$$^{\circ}\text{C} = 13.3$$

$$\text{K} = 286.3$$

321 K to F

$$321 = ^{\circ}\text{C} + 273$$

$$^{\circ}\text{F} = \frac{9}{5}(48) + 32$$

$$^{\circ}\text{C} = 48$$

$$^{\circ}\text{F} = 118.4$$

Directions – Record the correct number of significant figures for each number.

1) 1234 4

7) 0.00120 3

2) 0.023 2

8) 3.4×10^4 2

3) 890 2

9) 9.0×10^{-3} 2

4) 91010 4

10) 9.010×10^{-2} 4

5) 9010.0 5

11) 0.00030 2

6) 1090.0010 6

12) 1020010 6