

Name: _____

Scientific Notation/Significant Digits Worksheet

A) Convert each of the following into scientific notation.

- | | | |
|------------|---------------------------------------|-------------------------|
| 1. 3427 | <u>3.427×10^3</u> | 4. 172 |
| 2. 0.00456 | | 5. 3100.0×10^2 |
| 3. 123,453 | | 6. 0.0114×10^4 |

B) Determine the number of significant figures in each of the following:

- | | | |
|------------|----------|-------------------------|
| 1. 3427 | <u>4</u> | 4. 0.000984 |
| 2. 0.00456 | | 5. 0.502 |
| 3. 123,453 | | 6. 3100.0×10^2 |

C) Convert each into decimal form.

- | | | |
|--------------------------|---------------|---------------------------|
| 1. 1.56×10^4 | <u>15,600</u> | 4. 736.9×10^5 |
| 2. 0.56×10^{-2} | | 5. 0.00259×10^5 |
| 3. 3.69×10^{-2} | | 6. 13.69×10^{-2} |

D) Round each of the following to 3 significant figures.

- | | |
|---------------------------|-------------|
| 1. 77.0653 | <u>77.1</u> |
| 2. 6,300,278.2 | |
| 3. 0.00023350 | |
| 4. 2.895×10^{21} | |

E) Calculate the answer, use the correct number of significant figures.

- $(0.32)(14.50)(120) = \underline{5.6 \times 10^2}$
- $(24.1)/(0.005) =$
- $(3.9)(6.05)(420) =$
- $(14.1)/5 =$

Scientific Notation/Significant Digits Worksheet

A) Convert each of the following into scientific notation.

- | | | | |
|------------|-----------------------|-------------------------|----------------------|
| 1. 3427 | 3.427×10^3 | 4. 172 | 1.72×10^2 |
| 2. 0.00456 | 4.56×10^{-3} | 5. 3100.0×10^2 | 3.1000×10^5 |
| 3. 123,453 | 1.23453×10^5 | 6. 0.0114×10^4 | 1.14×10^2 |
-

B) Determine the number of significant figures in each of the following:

- | | | | |
|------------|----------|-------------------------|----------|
| 1. 3427 | 4 | 4. 0.000984 | 3 |
| 2. 0.00456 | 3 | 5. 0.502 | 3 |
| 3. 123,453 | 6 | 6. 3100.0×10^2 | 5 |
-

C) Convert each into decimal form.

- | | | | |
|--------------------------|---------------|---------------------------|-------------------|
| 1. 1.56×10^4 | 15,600 | 4. 736.9×10^5 | 73,690,000 |
| 2. 0.56×10^{-2} | 0.0056 | 5. 0.00259×10^5 | 259 |
| 3. 3.69×10^{-2} | 0.0369 | 6. 13.69×10^{-2} | 0.1369 |
-

D) Round each of the following to 3 significant figures.

- | | |
|---------------------------|---|
| 1. 77.0653 | 77.1 |
| 2. 6,300,278.2 | 6,300,000 |
| 3. 0.00023350 | 0.000234 |
| 4. 2.895×10^{21} | 2.90×10^{21} |
-

E) Calculate the answer, use the correct number of significant figures.

- | | |
|---------------------------|-------------------------------------|
| 1. $(0.32)(14.50)(120) =$ | 5.6×10^2 |
| 2. $(24.1)/(0.005) =$ | 5×10^3 |
| 3. $(3.9)(6.05)(420) =$ | 9.9×10^3 |
| 4. $(14.1)/5 =$ | 3 |

Name: _____ Period: _____

METRIC CONVERSIONS

Scientists all over the world use the same system of units so they can communicate information clearly. This system of measurement is called the **International System of Units (SI)**. Metric measurement is based on the number ten and makes calculations with the system relatively easy. By using the following conversion chart, converting from one unit to another is done simply by moving the decimal point:

Kilo- Hecto- Deca- Base deci- centi- milli-

Base = meter ,gram, or liter

For each of the following commonly used measurements, indicate its symbol. Use the symbols to complete the following sentences with the most appropriate unit. Units may be used more than once or not at all.

_____ milliliter _____ milligram _____ kilometer _____ centimeter
_____ kilogram _____ millimeter _____ second _____ gram
_____ meter _____ liter

1. Coke may be purchased in two or three _____ bottles.
2. The mass of a bowling ball is 7.25 _____.
3. The length of the common housefly is about 1 _____.
4. The mass of a paperclip is about 1 _____.
5. One teaspoon of cough syrup has a volume of 5 _____.
6. Stand with your arms raised out to your side. The distance from your nose to your outstretched fingers is about 1 _____.
7. On a statistical basis, smoking a single cigarette lowers your life expectancy by 642,000 _____, or 10.7 minutes.

Convert the following metric measurements:

1000 mg = _____ g	198g = _____ Kg	8 mm = _____ cm
160 cm = _____ mm	75 mL = _____ L	6.3 cm = _____ mm
109 g = _____ Kg	50 cm = _____ m	5.6 m = _____ cm
250 m = _____ Km	5 L = _____ mL	26,000 cm = _____ m
14 Km = _____ m	16 cm = _____ mm	56,500 mm = _____ Km
1 L = _____ mL	65 g = _____ mg	27.5 mg = _____ g
480 cm = _____ m	2500 m = _____ Km	923 cm = _____ m
27 g = _____ kg	355 mL = _____ L	0.025 Km = _____ cm

Metric Conversions - Answer Key

For each of the following commonly used measurements, indicate its symbol. Use the symbols to complete the following sentences with the most appropriate unit. Units may be used more than once or not at all.

mL milliliter

mg milligram

km kilometer

cm centimeter

kg kilogram

mm millimeter

s second

g gram

m meter

L liter

1. Coke may be purchased in two or three **liter** bottles.
2. The mass of a bowling ball is 7.25 **kg**.
3. The length of the common housefly is about 1 **cm**.
4. The mass of a paperclip is about 1 **mg**.
5. One teaspoon of cough syrup has a volume of 5 **mL**.
6. Stand with your arms raised out to your side. The distance from your nose to your outstretched fingers is about 1 **m**.
7. On a statistical basis, smoking a single cigarette lowers your life expectancy by 642,000 **s**, or 10.7 minutes.

PART C

Convert the following metric measurements:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Name: _____ Period: _____

UNIT CONVERSION WORKSHEET

Conversions

1 hour = 3600 seconds

1 meter = 3.28 feet

1 kg = 2.2 lbs

1 m/s = 2.2 miles/hour

1 mile = 5280 feet

1 km = 0.62 miles

1 lb = 0.45 kg

1 foot = 12 inches

1 yard = 3 feet

1 light second = 300,000,000 meters

1 quart = 0.946 liters

1 inch = 2.54 cm = 25.4 mm

Convert the following quantities. Show your work.

1. 565,900 seconds into days
2. 17 years into minutes
3. 43 miles into feet
4. 165 pounds into kilograms
5. 100 yards into meters
6. 22,647 inches into miles
7. 2678 cm into feet
8. 60 miles per hour into meters per second