

## Unit 1: Introduction

### 1 – Measurement and Scientific Notation

Measurements in physics are carried out in \_\_\_\_ units, aka the \_\_\_\_.

| Measurement  | Unit | Symbol |
|--------------|------|--------|
| Length       |      |        |
| Mass         |      |        |
| Time         |      |        |
| Speed        |      |        |
| Acceleration |      |        |
| Force        |      |        |
| Energy       |      |        |

#### Prefixes

| Prefix | Symbol | Factor |
|--------|--------|--------|
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |
|        |        |        |

#### Converting Units

1:

2:

3:

Ex.

1) Convert 165 mm to m

2) Convert 380 cg to mg

3) Convert 24 ML to mL

4) Convert 24 m/s to km/h

When converting between m/s and km/h remember the magic number:

#### Scientific Notation

Ex:

32 000 000 →

0.00000436 →

1. Write the following numbers in scientific notation:

a) 5,500,000,000

b) 780

c) 0.091

d) 0.000003004

2. Write the following numbers in regular notation:

a)  $5.5 \times 10^{-4}$

b)  $7.1 \times 10^6$

c)  $1.0 \times 10^3$

3. Compute the following:

a)  $10^3 \times 10^5$

b)  $4 \times 10^{-3} \times 5 \times 10^{-5}$

c)  $10^{-3} \times 10^5$

d)  $(8.0 \times 10^5)(1.2 \times 10^8)$

e)  $10^3 \div 10^5$

f)  $(2.3 \times 10^{-3}) \div (1.0 \times 10^{-5})$

g)  $10^{-3} \div 10^5$

h)  $(3 \times 10^8)^2$