2011 Sec 1 Science (Physics) Worksheet 1.1

Measurement and Units

Name: _____ ( ) Class: 1/ ___ Date: _____

1. **S.I. units** refer to the International System of Units (abbreviated S.I. from the French *Le Système International d'Unités*).

   Fill in the S.I. units for the following quantities:

Quantity	S.I. unit	Symbol
Length		
Mass		
Time		
Temperature		

2. Prefixes are commonly used to express larger or smaller quantities. For example, instead of writing 1000 m, we write 1 km where k represents kilo or 10^3 or 1000.

   Complete the table below on some commonly used S.I. prefixes.

Prefix	Symbol	Multiplying Factor
mega	M	
kilo		10^3 or 1000
	d	
centi		
	m	$10^{-3} = \frac{1}{1000}$ or 0.001

3. Conversion of Units

   Examples:

   1 mm = 1 × 0.001 m = 0.001 m

   1 cm = 1 × 0.01 m = 0.01 m

   1 m^2 = (100 cm)(100 cm) = 10000 cm^2 = 10^4 cm^2

   1 cm^3 = (0.01 m)(0.01 m)(0.01 m) = 0.000001 m^3 = 10^{-6} m^3

LIVEWORKSHEETS

3. Convert the following quantities into their basic units

(a) 11.5 dm = _____ m

(b) 545 mg = _____ kg

(c) 235 km = _____ m

(d) 190 ms = _____ s

4. Conversion of units

(a) Express 224 cm^2 in mm^2

(b) Express 52 m^2 in cm^2

(c) Express 320 cm^3 in m^3

(d) Express 45 dm^3 in cm^3

5. Complete the table below on the measurement of come common physical quantities using some laboratory instruments.

	Physical Quantity	**Appropriate instrument to use in the laboratory**	**Precision of measurement**
a.	The volume of fruit juice in a cup.		0.5 cm^3
b.	The depth of a test tube.		0.01 cm
c.	The mass of a book.		0.1 g
d.	The diameter of a coin.		0.1 mm
e.	The time to run 100 m.		0.01 s
f.	The circumference of your head.		0.1 cm
g.	The temperature of a room.		0.5 °C

LIVEWORKSHEETS

6. The diagram below shows a rectangle.



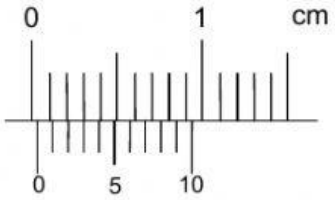
Use your ruler to measure the length and breadth of the rectangle. Record your reading in centimetres (cm) below.

Length = _____

Breadth = _____

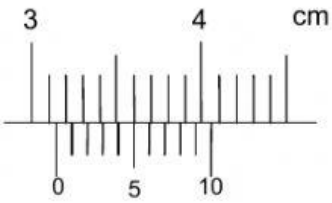
7. State the readings of the vernier calipers in each of the diagram below.

(a)



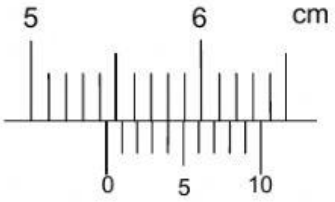
Ans: _____

(b)



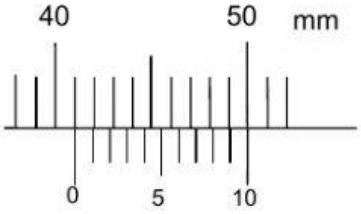
Ans: _____

(c)



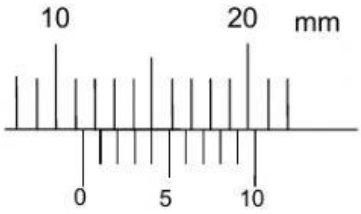
Ans: _____

(d)



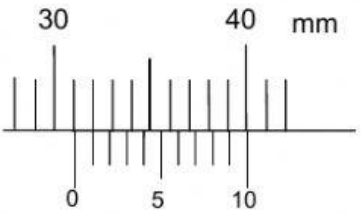
Ans: _____

(e)



Ans: _____

(f)



Ans: _____

The End

LIVEWORKSHEETS