

Measurement #3 (*Review*)

Metric Prefixes		
k	kilo-	10^3
–	(<i>base</i>)	10^0
c	centi-	10^{-2}
m	milli-	10^{-3}
μ	micro-	10^{-6}
n	nano-	10^{-9}

1. Complete the following unit conversions.

(a) $2500\ \mu\text{m} = ?\ \text{m}$

(c) $4.8\ \text{m} = ?\ \text{mm}$

(b) $326\ 000\ \text{mg} = ?\ \text{kg}$

(d) $2.1\ \text{s} = ?\ \text{ms}$

2. Express each of these measurements in MKS units:

(a) $9.1\ \text{km}$

(c) $320\ \text{g}$

(b) $53\ \text{cm}$

(d) $1.2\ \text{h}$

3. Express these numbers in scientific notation.

(a) 0.025

(c) $0.000\ 077\ 1$

(b) $1\ 150\ 000$

(d) 6070

4. Express these numbers in standard form.

(a) 2.96×10^7

(c) 6.67×10^{-11}

(b) 6.02×10^{-3}

(d) 9.8×10^5

Name:

Number:

Date:

5. Use your calculator to perform the following calculations:

(a) $(5.95 \times 10^{15}) \div (7.35 \times 10^{-20}) =$

(b) $(1.23 \times 10^9) \times (4.23 \times 10^{-8}) =$

6. You perform an experiment to measure the density of aluminum. After performing five trials, you get the following results:

Trial	Result (g/mL)
1	2.5
2	3.2
3	2.9
4	3.0
5	2.6

(a) Are your measurements precise? Explain.

(b) The widely accepted value for the density of aluminum is 2.7 g/mL. Are your measurements accurate? Explain.

(c) Calculate the percent error based upon your average measurement. Is your percent error reasonable? Explain.