SI (metric) measurement system and the USCS Equivalents

You are expected to memorize the boldface prefixes and their values. The other information you are expected to use this sheet for until you "learn by using."

giga (G)	1,000,000,000
mega (M)	1,000,000
kilo (k)	1,000
hecto (h)	100
deka (da)	10
base (none)	1
deci (d)	0.1
centi (c)	0.01
milli (m)	0.001
micro (μ)	0.000 001
nano (n)	0.000 000 001
pico (p)	0.000 000 000 001

SI base units	**USCS units**
mass - gram (g)	slug
length - meter (m)	inch (in), foot (ft), yard (yd), mile (mi)
time - second (s)	second (s), minute (min), hour (h)
temperature - Kelvin (K)	Rankine (R)
- centigrade/Celsius (°C)	Fahrenheit (°F)
energy - Joule (J)	calorie (cal), Calorie (Cal)
force - Newton (N)	pound (lb)
charge - coulomb (C)	coulomb (C)
area - square meter (m^2)	square inch (in^2)
volume - cubic meter (m^3)	ounce (oz), pint (pt), quart (qt), gallon (gal)
- liter (L)	
power - Watt (W)	horsepower (hp)
electric current - ampere (A)	ampere (A)

Equivalents/Conversion Factors

1 in = 2.54 cm	1 gal = 3.78 L	1 lb = 4.45 N	1 m = 3.28 ft
1 mi = 5280 ft	1 m = 39.37 in	1 hp = 746 W	5 km = 3.1 mi
1 °C = 1.8 °F			

Some practice problems for unit conversion

Part I – Move the decimal point to convert these SI to SI measurements. No work needed.

1) 730 mL = _____ L

2) 62 mg = _____ g

3) 0.82 kL = _____ L

4) 9.63 dm = _____ m

5) 382 dg = _____ g

6) 304 cg = _____ dg

7) 817 mg = _____ g

8) 37 L = _____ μL

9) 3.8 L = _____ cL

10) 7.00 km = _____ m

11) 9.4 dm = _____ cm

12) 23 m = _____ dm

13) 5.1 cm = _____ dm

14) 58.3 mm = _____ nm

15) 3.67 cL = _____ mL

Part II – Convert these SI/USCS measurements. Show your work on your own paper.

1) 150 lb = _____ N

2) 5.67 ft = _____ m

3) 85 in = _____ cm

4) 4.30 gal = _____ L

5) 6.50 h = _____ s

Part III – Put the numbers into or take out of scientific notation

1) 7.239×10^5 = _____

2) 8.2×10^{-6} = _____

3) 528 = _____

4) 405,250,000 = _____

5) 6.47×10^3 = _____

6) 9.4×10^{-9} = _____

7) 3,548 = _____

8) 0.009 7 = _____

9) 7×10^0 = _____

10) 1.23×10^9 = _____

11) 427 = _____