CHEM 110

Name:_____ Sort #:_____ Seat #:_____

CONVERSION RELATIONSHIPS

Length
2.540000 cm = 1 in
12 in = 1 ft
3 ft = 1 yd
5280 ft = 1 mi

Volume
1 qt = 0.9463 L
1 mL = 1 cm^3 (exact)
1 qt = 32 oz
1 gal = 4 qt

Mass
1 lb = 453.59237 g
1 amu = 1.6603×10^{-24} g
1 ton = 2000 lb
1 lb = 16 oz

Time
60 sec = 1 min

Amount
1 mol _____ = 6.0220×10^{23} _____
22.4 L of gas = 1 mol of gas at STP

Constants
R = 0.08206 L-atm/mol-K

Energy
1 cal = 4.186 J
1 g = 9.0×10^{13} J (not exact; 2 sf)

PHYSICAL CONSTANTS

Element	Density (g/cm^3)
Al	2.70
Cd	8.65
Cu	8.96
Au	19.32
Pb	11.35
Mg	1.738
Hg	13.546
Os	22.57
Ag	10.50
Zn	7.133

Element	HEAT CAPACITY cal/g-C	J/g-C
Al(s)	0.2154	0.9017
Fe(s)	0.1078	0.4513
Cu(s)	0.0920	0.385
Ag(s)	0.0564	0.236
$H_2O(l)$	1.000	4.186
$H_2O(s)$	0.498	2.08
$H_2O(g)$	0.480	2.01
$O_2(g)$	0.219	0.917
He(g)	1.242	5.199
$H_2(g)$	3.42	14.3

Heat of Fusion of water (? H_{fus}) at 0 C
79.71 cal/g or 333.7 J/g

Heat of Vaporization of water (? H_{vap}) at 100 C
539.5 cal/g or 2258 J/g