

Fig. 1.9 Calculations and Measurements Worksheet

a) Do the indicated arithmetic and give the answer to the correct number of significant figures

a) $48.075 + 0.0045(8.07) = 48.080$	b) $0.007 - 0.000 = 0.007$
c) $0.007 + 0.000 = 0.007$	d) $0.000075 + 54.0(7) \times 0.02 = 0.008$
e) $0.02(0.000) + 0.000 + 0.0017 = 0.002$	f) $0.017 - 0.02(0.000) + 0.0007 = 0.017$
g) $0.000000(0.0000) + 0.0017 = 0.0017$	h) $(0.7 \times 10^3 + 0.00010^3) + 7.75 = 0.00$
i) $0.002 + 0.000 + 7.7 \times 10^3 = 0.000007$	j) $0.40 + 0.0000 + 0.000 = 0.00000000$
k) $1.00 \text{ kg} + 0.000000000 = 0.00 \text{ kg} = 0.0 \text{ kg}$	l)

b) Provide names for the following compounds and give the general category they belong to (i.e. acids, molecules, ionic, base or buffer)

Na_2CO_3	sodium carbonate - base	Na_2CO_3	sodium carbonate - base
KH_2PO_4	potassium phosphate - base	Na_2CO_3	sodium carbonate - base
MgCl_2	magnesium (II) chloride - base	HCl	hydrogen chloride - acidic salt
$\text{Ca}(\text{OH})_2$	calcium hydroxide - base	H_2O	diatomic molecule - molecule
$\text{H}_2\text{SO}_4(\text{aq})$	sulfuric acid - acid	NaCO_3	sodium carbonate - base
H_2O	diatomic molecule - molecule	$\text{HCl}(\text{aq})$	hydrogen chloride - acid
$\text{HCl}(\text{aq})$	hydrochloric acid - acid	$\text{CaCl}_2 + \text{H}_2\text{O} + \text{aggr}(\text{aq})$	calcium chloride - base
H_2SO_4	sulfuric acid - acid	H_2	diatomic molecule - molecule
K_2HPO_4	potassium hydrogen phosphate - base	H_2O	diatomic molecule - molecule
CaCl_2	calcium chloride - base	H_2O	diatomic molecule - molecule
NaHCO_3	sodium bicarbonate - base	H_2O	diatomic molecule - molecule
CaCO_3	calcium carbonate - base	$\text{CaCl}_2 + \text{HCl}$	calcium chloride - base
$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$	sodium carbonate decahydrate - base	$\text{CaCO}_3 + \text{H}_2\text{O}$	calcium carbonate - base