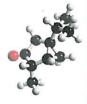
AS.CHEM1.2.002

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SIGNIFICANT FIGURES & STANDARD FORM



Name Form

Significant Figures

You need to be able to quote answers to the correct number of significant figures.

1) Write the following numbers to the quoted number of significant figures.

a) 345789	4 sig figs	345800	d) 6	3 sig figs	6.00
b) 297300	3 sig figs	297000	e) 0.001563	3 sig figs	0.00156
c) 0.07896	3 sin fins	0.0790	f) 0.01	1 sig figs	0.01000

2) Complete the following sums and give the answers to 3 significant figures.

a) 6125 x 384	2350000	d) 750 ÷ 25	30.0
b) 25.00 x 0.01	0.250.	e) 0.000152 x 13	0.00198.
c) 13.5 + 0.18	13.67	f) 0.0125 x 0.025	0.000312

Standard Form

a) 1.5 x 10⁻³

You need to be able to work with numbers in standard form.

3) Write the following numbers in non standard form.

	b)	0.046 x 10 ⁻²	0.00046	e)	10.3 x 10 ⁵	1030000
	c)	3.575×10^5	357500	f)	8.35 x 10 ⁻³	0.00835
4)		Write the following nu	umbers in standard form.			
	a)	0.000167	1.67 × 10-4	d)	34500	3.45×104
	b)	0.0524	5.24 × 10-2	e)	0.62	6.2 × 10-1
	c)	0.00000015	1.2×10-8.	f)	87000000	8.7×107

0.0015 d) 0.0534×10^4

- 5) Complete the following calculations and give the answers to 3 significant figures.
 - a) $6.125 \times 10^{3} \times 3.5$ b) $4.3 \times 10^{4} \div 7.0$ c) $4.0 \times 10^{8} + 35000$ d) $0.00156 + 2.4 \times 10^{3}$ e) $6.10 \times 10^{-2} 3.4 \times 10^{-5}$ f) $8.00 \times 10^{-3} \times 0.100 \times 10^{-3}$ $2.4 \times 10^{-2} 2.000000800$

A LEVEL ESSENTIALS 1

AE-01	Ras	iras	(Cheu	20-001	55.4

1)	a)	What is	the	difference	between	an	element	and a	compo	und?

(2)

b) All substances are made up of three types of particle: atoms, molecules or ions. Explain what atoms, molecules and ions are.

(3)

c) Identify each of the following particles as an atom, molecule or ion.

Write the formula of the following substances. Some are ionic, some are atomic and some are 2) molecular.

a) lithium oxide Li2O

e) ammonia

b) calcium nitrate Ca (NO3)2

f) nitrogen N₂

c) methane CH4

d) ammonium sulphate (NH₄), 80,

h) iron (III) hydroxide

Fe(OH)3 (8)

3) Balance the following equations.

a)
$$3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$$

(1)

(1)

b) $PCI_3 + \frac{1}{3}H_2O \rightarrow P(OH)_3 + \frac{1}{3}HCI$

c) ammonia + oxygen \rightarrow nitrogen + water $2NH_3 + O_2 \longrightarrow N_2 + 3H_2O$. (2)

C2H6 + O2 -> 2CO2 + 3H2O. d) ethane + oxygen → carbon dioxide + water (2)

Complete the following calculations, giving your answers to three significant figures. 4)

a) 32420 + 762891 745000

b) 12000 ÷ 1000

c) 0.06438 + 0.0004378 d) 180 ÷ 90

(4)

5) The following results are accurately measured values from experiments. Complete the sum and give the answer to the most number of significant figures that you think gives an answer that is trustworthy.

a) 1.4567 + 2.3

b) 10.5 - 0.145 c) 3.000 - 0.056

0.0 648

d) 8693.457 + 1.2367 8694.7

6) Rearrange the following equations to give the letter shown as the subject.

a) What does c equal if

b) What does T equal if

q = mcT? C = mT d) What does n equal if PV = nRT? $C = \frac{PV}{RT}$. C = H - TS T = (H - G) What does c equal if C = 2a = 3(b - 2c) C = (3b - 2a) C = 3pq f) What does T equal if C = mc + Rk (6)

(4)

c) What does q equal if

Challenge for the week

9 = 2Er 3p.

T = RR

7) Balance the following equations.

a) KMnO₄ + HCI \rightarrow KCI + MnCl₂ + Cl₂ + H₂O

(2)

b) $A_{S_4O_6} + S_2Cl_2 + Cl_2 \rightarrow A_{SCl_2} + SO_2$

(2)