Math Form 3 : Chapter 2 – Significant Figures

Example 1

Determine the number of significant figures for the numbers below.

(a) 2 763 (b) 5 008 (c) 7 409 (d) 15 000
(e) 0.7803 (f) 0.0809 (g) 12.051 (h) 1.2700

Solution:

(a) 2 763 [4 s.f.]
(b) 5 008 [4 s.f.] → The digit zero between non-zero digit is a significant figure.
(c) 7 409 [4 s.f.] → The digit zero between non-zero digit is a significant figure.
(d) (i) 15 000 [2 s.f.] → If level of accuracy is to the nearest thousand.
(ii) 15 000 [3 s.f.] → If level of accuracy is to the nearest hundred.
(iii) 15 000 [4 s.f.] → If level of accuracy is to the nearest ten.
(iv) 15 000 [5 s.f.] → If level of accuracy is to the nearest one.
(e) 0.7803 [4 s.f.]
(f) 0.0809 [3 s.f.] → The digit zero before first non-zero digit is not significant figure.
(g) 12.051 [5 s.f.]
(h) 1.2700 [5 s.f.] → All zeros after non-zero digit at end of decimal are significant figures.

MIND TEST 2.1a

TIPS
Significant figure can be written as s.f..

1. State the number of significant figures for the following numbers.
(a) 2 600 (b) 30 004 (c) 4 000 600 (d) 0.5003
(e) 0.080 (f) 9.0070 (g) 0.002000 (h) 30.0002

a)	b)	c)	d)
e)	f)	g)	h)

MIND TEST 2.1b

1. Complete the table below by rounding off each number below to the given significant figure.

Number	3 significant figures	2 significant figures	1 significant figure
(a) 47 193			
(b) 5 261			
(c) 305.72			
(d) 20.68			
(e) 8.595			
(f) 5.9			
(g) 0.6937			
(h) 0.09184			
(i) 0.005709			

2. Calculate each operation below. State the answer to the significant figures shown in the brackets.

(a) $2.57 \times 4.5 + 0.45$ [4]

(b) $8.59 \div 2.1 - 1.26$ [3]

(c) $14.23 - 2.6 \times 1.2$ [3]

(d) $15.74 + 20.3 \div 2.5$ [2]

(e) $7.63 \times 0.5 \div 4.2 + 5.7$ [3]

(f) $10.25 \div 0.75 - 4.2 \times 0.2$ [2]

(g) $15.62 - 1.72 \times 0.2 + 6.3$ [1]

(h) $4.94 + 5.76 \div 0.26 \times 1.4$ [3]

a)	b)
c)	d)
e)	f)
g)	h)