

# S2 Block Test 1 Revision Booklet



# DST

- Choose the appropriate formula and show all working in each of the following :-
  - Pauline drove 300 kilometres at 60 km/hr. How long did she take ?
  - Arnie flew at 120 mph for 4 hours. How far had Arnie flown ?
  - Kevin took 4 hours to cycle 60 kilometres. How fast was he cycling ?
- Change each of the following times to decimals :-
  - 48 mins
  - 3 hrs 12 mins
  - 1 hr 42 mins.
- Change each time to hours and minutes :-
  - 2.25 hours
  - 0.45 hours
  - 5.05 hours.
- Fred takes three quarters of an hour to drive 42 km to work.  
What is Fred's average speed ?
  - Jeri drives at 80 km/hr and takes 1 hour and 12 minutes to get to work.  
How far does Jeri drive to work ?
  - Terry the tortoise takes 40 minutes to crawl 16 metres.  
Sally Slug slithers 900 centimetres in 30 minutes.  
How much faster is Terry than Sally ?
- Last Sunday, Chelsea left home at Noon and cycled 20 kilometres to her office.  
She arrived at 1:20 pm and spent 10 minutes collecting the papers she had forgotten.  
She then cycled home and arrived at 2.30 pm.
  - Show all the given information on a distance-time graph.
  - Calculate the speed of her journey :- (i) to the office (ii) home.

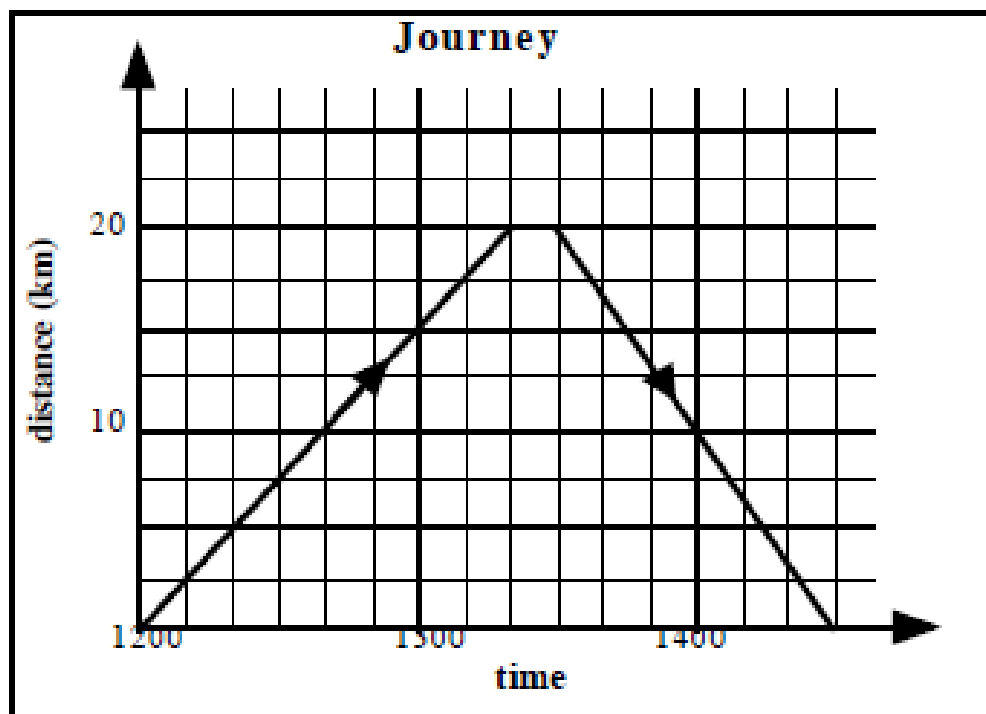


# Solutions

## Review - Revisit - Revise Exercise 15

1. a 5 hrs    b 480 mile c 15 km/hr
2. a 0.8      b 3.2      c 1.7
3. a 2 hr 15 min                      b 27 min    c 5 hr 3 min
4. a 56 km/hr                          b 96 km  
c Terry - 24 m/hr, Sally - 18 m/hr (Terry)  
6 m/hr faster

5. a



b (i) 15 km/hr (ii) 20 km/hr

# Scientific Notation

A. These numbers are given as standard index form. Write them as ordinary numbers.

- |                          |                         |                         |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|
| 1). $1.4 \times 10^2$    | 2). $2 \times 10^3$     | 3). $6.3 \times 10^1$   | 4). $4.52 \times 10^2$  |
| 5). $7 \times 10^4$      | 6). $5.6 \times 10^4$   | 7). $4.56 \times 10^4$  | 8). $8.3 \times 10^1$   |
| 9). $3.5 \times 10^0$    | 10). $4.76 \times 10^6$ | 11). $2 \times 10^5$    | 12). $7.02 \times 10^3$ |
| 13). $6 \times 10^1$     | 14). $2.1 \times 10^2$  | 15). $4.63 \times 10^1$ | 16). $6.1 \times 10^5$  |
| 17). $9 \times 10^0$     | 18). $7.8 \times 10^4$  | 19). $1.3 \times 10^2$  | 20). $9.7 \times 10^0$  |
| 21). $4.571 \times 10^4$ | 22). $6.78 \times 10^2$ | 23). $1.8 \times 10^5$  | 24). $3.67 \times 10^8$ |
| 25). $6.82 \times 10^1$  | 26). $4.01 \times 10^3$ | 27). $3.55 \times 10^1$ | 28). $3.91 \times 10^5$ |

Write these numbers in standard index form.

- |             |              |             |              |
|-------------|--------------|-------------|--------------|
| 1). 470     | 2). 5000     | 3). 60      | 4). 3600     |
| 5). 972     | 6). 15       | 7). 6.8     | 8). 890000   |
| 9). 365     | 10). 620000  | 11). 23     | 12). 620     |
| 13). 5100   | 14). 8000000 | 15). 560000 | 16). 8       |
| 17). 6300   | 18). 93      | 19). 4.93   | 20). 12400   |
| 21). 320000 | 22). 900000  | 23). 4562   | 24). 572     |
| 25). 23.5   | 26). 93400   | 27). 207    | 28). 7210000 |

# Solutions

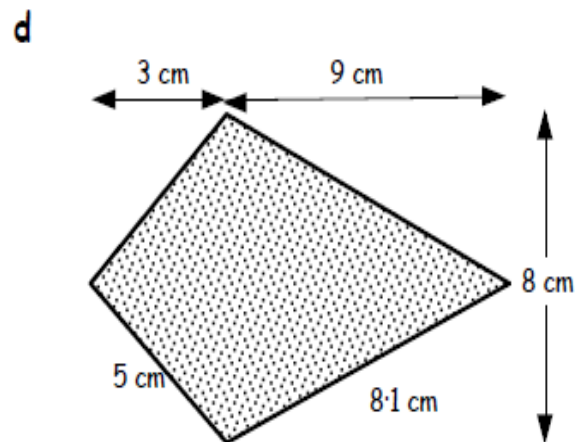
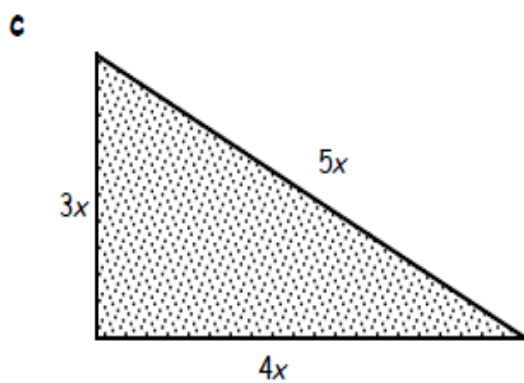
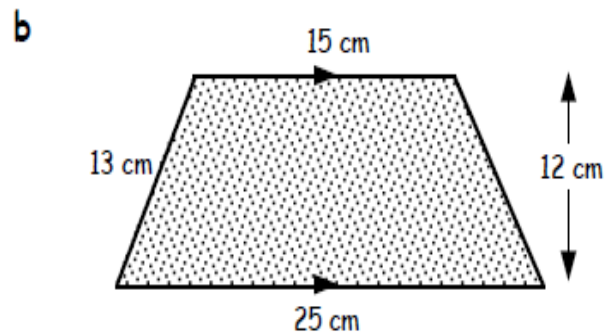
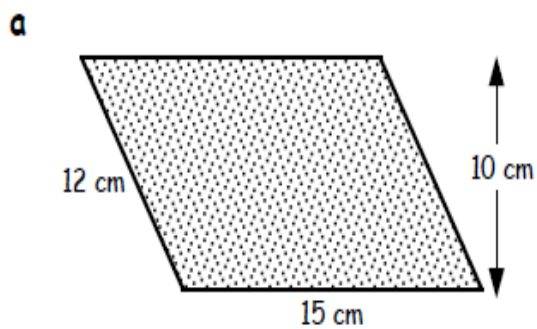
- 1). 140 2). 2000 3). 63 4). 452 5). 70000 6). 56000  
7). 45600 8). 83 9). 3.5 10). 4760000 11). 200000 12). 7020  
13). 60 14). 210 15). 46.3 16). 610000 17). 9 18). 78000  
19). 130 20). 9.7 21). 45710 22). 678 23). 180000 24). 367000000  
25). 68.2 26). 4010 27). 35.5 28). 391000

- 1).  $4.7 \times 10^2$  2).  $5 \times 10^3$  3).  $6 \times 10^1$  4).  $3.6 \times 10^3$  5).  $9.72 \times 10^2$   
6).  $1.5 \times 10^1$  7).  $6.8 \times 10^0$  8).  $8.9 \times 10^5$  9).  $3.65 \times 10^2$  10).  $6.2 \times 10^5$   
11).  $2.3 \times 10^1$  12).  $6.2 \times 10^2$  13).  $5.1 \times 10^3$  14).  $8 \times 10^6$  15).  $5.6 \times 10^5$   
16).  $8 \times 10^0$  17).  $6.3 \times 10^3$  18).  $9.3 \times 10^1$  19).  $4.93 \times 10^0$  20).  $1.24 \times 10^4$   
21).  $3.2 \times 10^5$  22).  $9 \times 10^5$  23).  $4.562 \times 10^3$  24).  $5.72 \times 10^2$  25).  $2.35 \times 10^1$   
26).  $9.34 \times 10^4$  27).  $2.07 \times 10^2$  28).  $7.21 \times 10^6$

# Area Quadrilaterals

1. For each shape below :-

(i) name the shape (ii) state the formula used to find its area (iii) find the area.



# Solutions

1. a (i) parallelogram  
(ii)  $A = B \times H$  (iii)  $150 \text{ cm}^2$
  - b (i) trapezium  
(ii)  $A = \frac{1}{2}h(a + b)$  (iii)  $240 \text{ cm}^2$
  - c (i) triangle  
(ii)  $A = \frac{1}{2}b \times h$  (iii)  $6x^2$
  - d (i) kite  
(ii)  $A = \frac{1}{2}D \times d$  (iii)  $48 \text{ cm}^2$
2. a 54 cm    b 63 cm    c  $12x$     d 26.2 cm
  3. a  $84 \text{ cm}^2$     b  $53.5 \text{ cm}^2$

# Fractions

## Question 1

Find:

$$(a) \frac{2}{5} + \frac{1}{5}$$

$$(b) \frac{4}{5} + \frac{2}{3}$$

$$(c) \frac{8}{9} - \frac{2}{3}$$

$$(d) \frac{4}{5} - \frac{3}{8}$$

$$(e) 2\frac{4}{5} + 3\frac{3}{4}$$

$$(f) 1\frac{1}{7} + \frac{3}{5}$$

$$(g) 5\frac{2}{3} - 3\frac{3}{5}$$

$$(h) 5\frac{1}{3} - 2\frac{3}{4}$$

## Question 2

Find:

$$(a) \frac{4}{9} \times \frac{7}{8}$$

$$(b) \frac{2}{3} \times \frac{9}{16}$$

$$(c) 2\frac{1}{3} \times 1\frac{1}{5}$$

$$(d) 5\frac{5}{6} \times 1\frac{3}{7}$$

$$(e) \frac{5}{6} \div \frac{2}{3}$$

$$(f) \frac{7}{9} \div \frac{2}{3}$$

$$(g) \frac{15}{7} \div \frac{5}{14}$$

$$(h) 3\frac{5}{9} \div 2\frac{2}{3}$$



# Solutions

## Question 1

(a)  $\frac{3}{5}$

(b)  $\frac{22}{15}$  or  $1\frac{7}{15}$

(c)  $\frac{2}{9}$

(d)  $\frac{17}{40}$

(e)  $\frac{131}{20}$  or  $6\frac{11}{20}$

(f)  $\frac{61}{35}$  or  $1\frac{26}{35}$

(g)  $\frac{31}{15}$  or  $2\frac{1}{15}$

(h)  $\frac{31}{12}$  or  $2\frac{7}{12}$

## Question 2

(a)  $\frac{7}{18}$

(b)  $\frac{3}{8}$

(c)  $\frac{14}{5}$  or  $2\frac{4}{5}$

(d)  $\frac{25}{3}$  or  $8\frac{1}{3}$

(e)  $\frac{5}{4}$  or  $1\frac{1}{4}$

(f)  $\frac{7}{6}$  or  $1\frac{1}{6}$

(g) 6

(h)  $\frac{4}{3}$  or  $1\frac{1}{3}$

# Equations/Inequations

## Question 1

Multiply out the brackets:

(a)  $2(2g + 3)$

(b)  $3(4a + 1)$

(c)  $5(1 + 2d)$

(d)  $2(3 - 4k)$

(e)  $6(6h - 1)$

(f)  $10(3 - 7n)$

(g)  $4(2a + 3y)$

(h)  $5(3t + x)$

(i)  $2(4b - 3c)$

(j)  $8(10k - 3p)$

(k)  $7(11n - 9x)$

(l)  $6(3ab - d)$

(m)  $x(y + 5)$

(n)  $a(p + 8)$

(o)  $w(t - 1)$

(p)  $g(g - 2)$

(q)  $a(n + 9)$

(r)  $w(m - a)$

(s)  $e(f - 10)$

(t)  $x(2 + x)$

(u)  $a(2n + g)$

(v)  $x(4y + 3u)$

(w)  $6a(2 - 4a)$

(x)  $3u(10u - w)$

## Question 2

Solve each of the following equations:

(a)  $2(x + 1) = 10$

(b)  $3(2x + 8) = 30$

(c)  $5(5x - 1) = 20$

(d)  $4(4y + 1) = 36$

(e)  $9(2y - 10) = 0$

(f)  $7(5y - 2) = 56$

(g)  $3(k + 2) + 6 = 21$

(h)  $4(2w + 1) - 3 = 17$

(i)  $3(3p + 3) + 3p = -3$

(j)  $5(q + 3) + 2(2q - 5) = 23$

(k)  $5(3d + 2) + 3(1 - 2d) = 13$

## Question 3

Solve each of the following equations:

(a)  $\frac{1}{2}x + 3 = 9$

(b)  $\frac{1}{4}x - 2 = 1$

(c)  $\frac{1}{8}x + 5 = 8$

(d)  $\frac{2}{3}x - 1 = 3$

(e)  $\frac{3}{5}x + 11 = 0$

(f)  $30 - \frac{3}{8}x = 21$

# Solutions

## Question 1

(a)  $4g + 6$

(b)  $12a + 3$

(c)  $5 + 10d$

(d)  $6 - 8k$

(e)  $36h - 6$

(f)  $30 - 70n$

(g)  $8a + 12y$

(h)  $15t + 5x$

(i)  $8b - 6c$

(j)  $80k - 24p$

(k)  $77n - 63x$

(l)  $18ab - 6d$

(m)  $xy + 5x$

(n)  $ap + 8a$

(o)  $wt - w$

(p)  $g^2 - 2g$

(q)  $an + 9a$

(r)  $wm - wa$

(s)  $ef - 10e$

(t)  $2x + x^2$

(u)  $2an + ag$

(v)  $4xy + 3ux$

(w)  $12a - 24a^2$

(x)  $30u^2 - 3uw$

## Question 2

(a)  $x = 4$

(b)  $x = 1$

(c)  $x = 1$

(d)  $y = 2$

(e)  $y = 5$

(f)  $y = 2$

(g)  $k = 3$

(h)  $w = 2$

(i)  $p = -1$

(j)  $q = 2$

(k)  $d = 0$

## Question 3

(a)  $x = 12$

(b)  $x = 12$

(c)  $x = 24$

(d)  $x = 6$

(e)  $x = -\frac{55}{3}$

(f)  $x = 24$



# Equations/Inequations

## Question 4

Factorise fully:

(a)  $4a + ac$

(b)  $6v - gv$

(c)  $xy + xz$

(d)  $p^2 + 9p$

(e)  $3g - g^2$

(f)  $n^2 - 4n$

(g)  $7xr + 7xs$

(h)  $3jk - 6jh$

(i)  $12vw - 12w$

(j)  $3d^2 + 8d$

(k)  $9g^2 - 15ge$

(l)  $2n^2 - n$

(m)  $4a + 14a^2$

(n)  $p - 2p^2$

(o)  $3c^2 - 12dc$

(p)  $16ab + 24b^2$

# Solutions

## Question 4

(a)  $a(4 + c)$

(b)  $v(6 - g)$

(c)  $x(y + z)$

(d)  $p(p + 9)$

(e)  $g(3 - g)$

(f)  $n(n - 4)$

(g)  $7x(r + s)$

(h)  $3j(k - 2h)$

(i)  $12w(v - 1)$

(j)  $d(3d + 8)$

(k)  $3g(3g - 5e)$

(l)  $n(2n - 1)$

(m)  $2a(2 + 7a)$

(n)  $p(1 - 2p)$

(o)  $3c(c - 4d)$

(p)  $8b(2a + 3b)$

# Equations/Inequations

1. Solve these inequalities, leaving your answers in the form  $x > 3$ , etc. :-

(a)  $x + 3 > 5$

(b)  $x + 6 < 13$

(c)  $x - 7 \leq 10$

(d)  $x + 4 \geq 17$

(e)  $x - 3 \leq 3$

(f)  $x - 8 \geq 0$

2. Solve each inequality, leaving your answers in the form  $x \leq 5$ , etc. :-

(a)  $4x < 20$

(b)  $5x > 30$

(c)  $3x < 21$

(d)  $8x \geq 48$

(e)  $9x \leq 45$

(f)  $10x > 120$

3. Solving the following inequalities :-

(a)  $5x + 1 < 31$

(b)  $3x + 2 > 14$

(c)  $6x - 4 < 14$

(d)  $2x + 5 \geq 19$

(e)  $10x - 3 \leq 67$

(f)  $8x - 11 > 61$

(g)  $6x + 6 \leq 6$

(h)  $4x - 5 < 15$

(i)  $9x - 1 > 53$

(j)  $8x - 16 < 0$

(k)  $10x - 10 \geq 10$

(l)  $2x + 7 \leq 16$

(m)  $2(x + 3) < 14$

(n)  $3(x + 1) > 33$

(o)  $4(x - 5) \geq 40$


(p)  $3(2x + 1) \leq 39$

(q)  $2(5x - 1) > 8$

(r)  $2(4x + 5) \leq 10$

# Equations/Inequations

## Ch 43 Ex 6 (Page 177)

1. a  $x > 2$     b  $x < 7$     c  $x \leq 17$   
   d  $x \geq 13$     e  $x \leq 6$     f  $x \geq 8$
  2. a  $x < 5$     b  $x > 6$     c  $x < 7$   
   d  $x \geq 6$     e  $x \leq 5$     f  $x > 12$
  3. a  $x < 6$     b  $x > 4$     c  $x < 3$     d  $x \geq 7$   
   e  $x \leq 7$     f  $x > 9$     g  $x \leq 0$     h  $x < 5$   
   i  $x > 6$     j  $x < 2$     k  $x \geq 2$     l  $x \leq 4.5$   
   m  $x < 7$     n  $x > 10$     o  $x \geq 15$     p  $x \leq 6$   
   q  $x > 1$     r  $x \leq 0$
- 

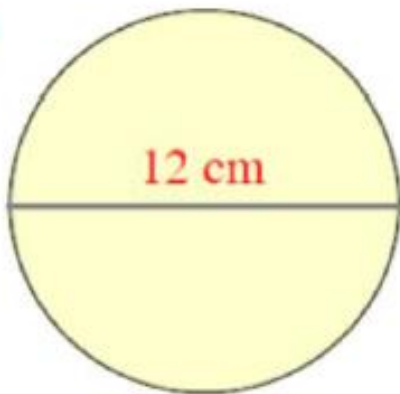
# Circle

## Circles (Calculator)

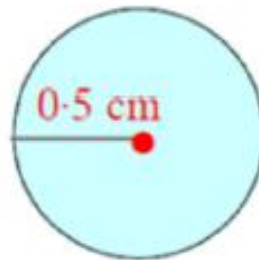
### Question 1

Calculate the circumference of the following circles:

(a)



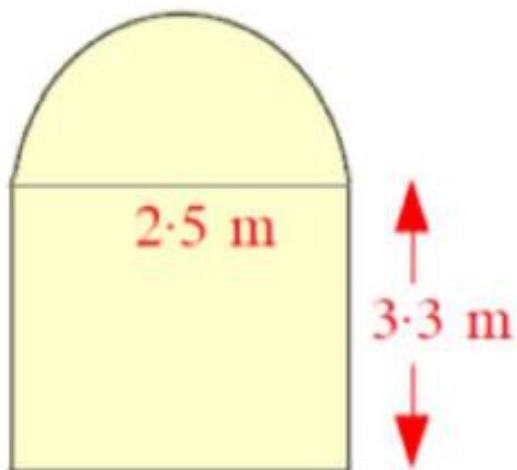
(b)



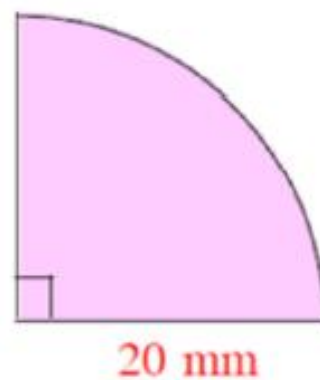
### Question 2

Calculate the perimeter of each shape:

(a)



(b)



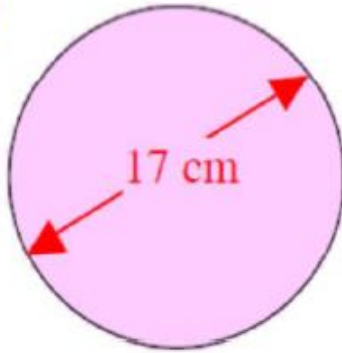


# Circle

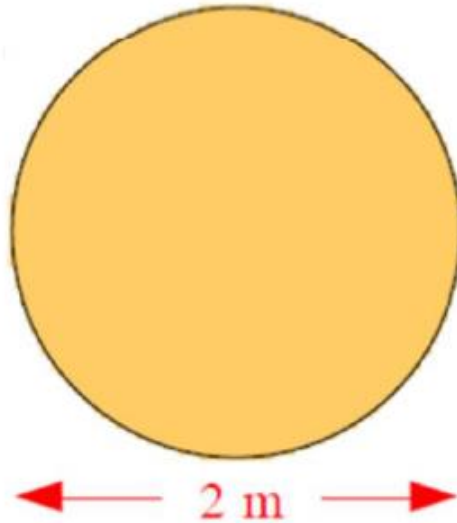
## Question 3

Find the area of each circle below:

(a)

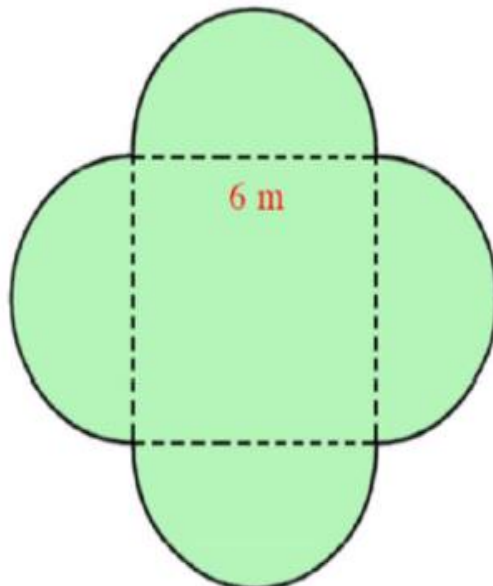


(b)



## Question 4

A garden is designed as shown using a square of side 6 metres and four semi-circles.



# Solutions

## Circles

### Question 1

(a) 37.68 cm

(b) 3.14 cm

### Question 2

(a) 11.06 m

(b) 71.4 mm

### Question 3

(a) 226.87 cm<sup>2</sup>

(b) 3.14 m<sup>2</sup>

### Question 4

92.52 m<sup>2</sup>

# Significant Figures

3. Round each number to **1** significant figure :-

|                |                 |                    |                 |
|----------------|-----------------|--------------------|-----------------|
| <b>a</b> 67    | <b>b</b> 742    | <b>c</b> 6118      | <b>d</b> 56 297 |
| <b>e</b> 4298  | <b>f</b> 3467   | <b>g</b> 7.54      | <b>h</b> 0.045  |
| <b>i</b> 0.456 | <b>j</b> 0.0099 | <b>k</b> 0.000 642 | <b>l</b> 39.21. |

4. Round each number to **2** significant figures :-

|                |                    |                   |                  |
|----------------|--------------------|-------------------|------------------|
| <b>a</b> 607   | <b>b</b> 5124      | <b>c</b> 30701    | <b>d</b> 653761  |
| <b>e</b> 46.68 | <b>f</b> 36.54     | <b>g</b> 9.276    | <b>h</b> 0.123   |
| <b>i</b> 0.587 | <b>j</b> 0.006 647 | <b>k</b> 0.044 55 | <b>l</b> 99.512. |

5. Round each number to **3** significant figures :-

|                   |                   |                    |                     |
|-------------------|-------------------|--------------------|---------------------|
| <b>a</b> 7654     | <b>b</b> 55066    | <b>c</b> 99754     | <b>d</b> 345199     |
| <b>e</b> 8.234    | <b>f</b> 77.934   | <b>g</b> 0.534 456 | <b>h</b> 0.876 234  |
| <b>i</b> 0.001541 | <b>j</b> 0.010 67 | <b>k</b> 0.055 66  | <b>l</b> 0.099 999. |

# Solutions

3. (a) 70      (b) 700      (c) 6000      (d) 60000  
(e) 4000      (f) 3000      (g) 8      (h) 0.05  
(i) 0.5      (j) 0.01      (k) 0.0006      (l) 40
4. (a) 610      (b) 5100      (c) 31000      (d) 650000  
(e) 47      (f) 37      (g) 9.3      (h) 0.12  
(i) 0.59      (j) 0.0066      (k) 0.045      (l) 100
5. (a) 7650      (b) 55100      (c) 99800      (d) 345000  
(e) 8.23      (f) 77.9      (g) 0.534      (h) 0.876  
(i) 0.00154      (j) 0.0107      (k) 0.0557      (l) 0.100