



# MATHEMATICS



ANSWER BOOKLET

## Unit 2

Shape, Space and  
Measure

# Time

## Exercise 1 – Page 2

- 1**    **a** 0500            **b** 1700            **c** 1400            **d** 0730  
         **e** 2140            **f** 1125            **g** 1420            **h** 0015  
         **i** 2210            **j** 1500            **k** 1930            **l** 2325
- 2**    **a** 5.00am        **b** 4.00pm        **c** 2.00am        **d** 7.30am  
         **e** 1.24pm        **f** 5.05pm        **g** 3.24pm        **h** 1.45am  
         **i** 6.55am        **j** 8.10pm        **k** 10.15pm      **l** 11.32pm

## Exercise 2 – Page 3

- 1**    **a** 1 hour            **b** 4 hours            **c** 2 hours            **d** 4 hours  
         **e** 5 hours            **f** 10 hours
- 2**    **a** 25 mins        **b** 15 mins        **c** 15 mins        **d** 45 mins  
         **e** 35 mins        **f** 17 mins        **g** 28 mins        **h** 15 mins  
         **i** 20 mins        **j** 33 mins        **k** 55 mins        **l** 45 mins
- 3**    **a** 1 hour 30 mins                    **b** 2 hours 30 mins  
         **c** 1 hour 15 mins                    **d** 3 hours 30 mins  
         **e** 3 hours 30 mins                    **f** 4 hours 30 mins  
         **g** 5 hours 20 mins                    **h** 2 hours 15 mins  
         **i** 1 hour 25 mins                    **j** 3 hours 33 mins  
         **k** 2 hours 2 mins                    **l** 3 hours 46 mins
- 4**    **a** 30 mins            **b** 4 hours 45 mins                    **c** 12.15am

## Exercise 3 – Page 4

- 1**    **a** 0900            **b** 0915            **c** 15 mins            **d** 0940  
         **e** 25 mins
- 2**    **a** 1010            **b** 1031            **c** 21 mins            **d** 1050  
         **e** 55 mins

- 3 a 0842                      b 0912                      c 10 mins                      d 5 mins  
 e 1017                      f 7 mins                      g 1042
- 4 a 1230                      b C or D                      c 1435                      d A or C  
 e 1725
- 5 a 2030                      b i) 2330                      ii) 0015                      c 0545  
 d 2340                      e 2 hours 5 mins
- 6 a A & B                      b B, C & D                      c B                      d C  
 e 1042  
 f i) 2 hours 48 mins                      ii) 2 hours 45 mins  
 iii) A                      iv) 3 mins
- 7 a Leave 1810                      Train leaves 1828  
 Train Arrives 1845                      Arrive 1915
- 7 b Leave 1700                      Train Departs 1718  
 Train Arrives 1747                      Meet Friend 1817  
 Leave for theatre 1917
- 7 c Leave theatre 2200                      Arrive Liverpool St 2210  
 Departs 2220                      Arrive 2246  
 Home 2301

### Exercise 4 – Page 12

- 1 11.55am                      2 1.10pm                      3 9.35am                      4 7.15pm  
 5 11.25am                      6 11.55am                      7 10.05am                      8 2.22pm  
 9 7.58am                      10 8.03am                      11 2 hour 45 mins  
 12 2.10pm

## Perimeter

### Exercise 1 – Page 13

- 1 a 24cm                      b 16cm                      c 8cm                      d 26cm  
 e 50cm                      f 64cm                      g 20cm                      h 54cm
- 2 a 36m                      b 36m                      c 36m                      d 36m

- |          |               |               |               |               |
|----------|---------------|---------------|---------------|---------------|
| <b>3</b> | <b>a</b> 26cm | <b>b</b> 34cm | <b>c</b> 44cm | <b>d</b> 36cm |
|          | <b>e</b> 80cm | <b>f</b> 70cm |               |               |

## Area

### Exercise 1 – Page 17

- |          |                             |                             |                            |                            |
|----------|-----------------------------|-----------------------------|----------------------------|----------------------------|
| <b>1</b> | <b>a</b> $28\text{cm}^2$    | <b>b</b> $72\text{cm}^2$    | <b>c</b> $12\text{cm}^2$   | <b>d</b> $33\text{m}^2$    |
|          | <b>e</b> $10\text{cm}^2$    | <b>f</b> $24\text{cm}^2$    | <b>g</b> $18\text{m}^2$    | <b>h</b> $78\text{km}^2$   |
|          | <b>i</b> $55\text{km}^2$    |                             |                            |                            |
| <b>2</b> | <b>a</b> $4.35\text{m}^2$   | <b>b</b> $153.3\text{cm}^2$ | <b>c</b> $1568\text{cm}^2$ | <b>d</b> $0.84\text{km}^2$ |
|          | <b>e</b> $19.11\text{cm}^2$ | <b>f</b> $3618\text{cm}^2$  |                            |                            |

### Exercise 2 – Page 18

- |          |                    |          |                    |          |                  |          |                    |
|----------|--------------------|----------|--------------------|----------|------------------|----------|--------------------|
| <b>1</b> | $32\text{cm}^2$    | <b>2</b> | $63\text{cm}^2$    | <b>3</b> | $6.25\text{m}^2$ | <b>4</b> | $18\text{km}^2$    |
| <b>5</b> | $384\text{cm}^2$   | <b>6</b> | $1.5625\text{m}^2$ | <b>7</b> | $320\text{m}^2$  | <b>8</b> | $47628\text{cm}^2$ |
| <b>9</b> | $43200\text{mm}^2$ |          |                    |          |                  |          |                    |

### Exercise 3 – Page 18

- |           |                     |           |                     |           |                     |           |                    |
|-----------|---------------------|-----------|---------------------|-----------|---------------------|-----------|--------------------|
| <b>1</b>  | $48\text{cm}^2$     | <b>2</b>  | $25\text{cm}^2$     | <b>3</b>  | $18\text{cm}^2$     | <b>4</b>  | $24\text{cm}^2$    |
| <b>5</b>  | $30\text{cm}^2$     | <b>6</b>  | $38.5\text{cm}^2$   | <b>7</b>  | $96\text{cm}^2$     | <b>8</b>  | $60\text{cm}^2$    |
| <b>9</b>  | $60\text{cm}^2$     | <b>10</b> | $40\text{cm}^2$     | <b>11</b> | $450\text{cm}^2$    | <b>12</b> | $187.5\text{cm}^2$ |
| <b>13</b> | $26\text{cm}^2$     | <b>14</b> | $5.58\text{cm}^2$   | <b>15</b> | $50.215\text{cm}^2$ |           |                    |
| <b>16</b> | $20.8\text{cm}^2$   | <b>17</b> | $39.585\text{cm}^2$ |           |                     |           |                    |
| <b>18</b> | $215.05\text{cm}^2$ | <b>19</b> | $4.37\text{cm}^2$   |           |                     |           |                    |

### Exercise 4 – Page 19

- |          |                           |                            |                           |                           |
|----------|---------------------------|----------------------------|---------------------------|---------------------------|
| <b>1</b> | <b>a</b> $60\text{m}^2$   | <b>b</b> $68\text{m}^2$    | <b>c</b> $75\text{m}^2$   | <b>d</b> $26\text{m}^2$   |
| <b>2</b> | <b>a</b> $33\text{cm}^2$  | <b>b</b> $56\text{cm}^2$   | <b>c</b> $113\text{cm}^2$ | <b>d</b> $26\text{cm}^2$  |
|          | <b>e</b> $290\text{cm}^2$ | <b>f</b> $180\text{cm}^2$  |                           |                           |
| <b>3</b> | <b>a</b> $100\text{mm}^2$ | <b>b</b> $68\text{mm}^2$   | <b>c</b> $300\text{mm}^2$ | <b>d</b> $150\text{mm}^2$ |
|          | <b>e</b> $16\text{mm}^2$  | <b>f</b> $47.5\text{mm}^2$ | <b>g</b> $42\text{mm}^2$  |                           |
| <b>4</b> | <b>a</b> $260\text{m}^2$  | <b>b</b> $100\text{m}^2$   | <b>c</b> $260\text{m}^2$  | <b>d</b> $162\text{m}^2$  |
|          | <b>e</b> $94.5\text{m}^2$ | <b>f</b> $48\text{m}^2$    | <b>g</b> $315\text{m}^2$  |                           |

# Volume

## Exercise 1 – Page 24

- |          |                  |           |                   |           |                  |           |                   |
|----------|------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|
| <b>1</b> | $27\text{cm}^3$  | <b>2</b>  | $729\text{cm}^3$  | <b>3</b>  | $343\text{cm}^3$ | <b>4</b>  | $96\text{cm}^3$   |
| <b>5</b> | $180\text{cm}^3$ | <b>6</b>  | $42\text{cm}^3$   | <b>7</b>  | $144\text{cm}^3$ | <b>8</b>  | $2744\text{cm}^3$ |
| <b>9</b> | $252\text{cm}^3$ | <b>10</b> | $8000\text{cm}^3$ | <b>11</b> | $720\text{cm}^3$ | <b>12</b> | $90\text{cm}^3$   |

## Exercise 2 – Page 25

- |          |                    |          |                   |          |                       |          |                 |
|----------|--------------------|----------|-------------------|----------|-----------------------|----------|-----------------|
| <b>1</b> | $1030\text{cm}^3$  | <b>2</b> | $1008\text{cm}^3$ | <b>3</b> | $270\text{cm}^3$      | <b>4</b> | $44\text{cm}^3$ |
| <b>5</b> | $360\text{cm}^3$   | <b>6</b> | $3296\text{cm}^3$ | <b>7</b> | $1682.061\text{cm}^3$ |          |                 |
| <b>8</b> | $2.436\text{cm}^3$ |          |                   |          |                       |          |                 |

# Directions

## Exercise 1 – Page 26

- |          |          |          |                |
|----------|----------|----------|----------------|
| <b>1</b> | <b>a</b> | <b>b</b> | Cromarty Drive |
|          | <b>c</b> | <b>d</b> | Heather Lane   |
|          | <b>e</b> | <b>f</b> | Bank Street    |
|          | <b>g</b> | <b>h</b> | zRose Way      |
- 2**
- a** 2nd on right then 1st left
  - b** 4th on right then 1st left
  - c** 2nd on left then 1st right
  - d** 2nd on left and it is on the left side
  - e** 1st right and school is on the left.
- 3**
- |          |              |          |              |
|----------|--------------|----------|--------------|
| <b>a</b> | Holly Street | <b>b</b> | Ivy Crescent |
|----------|--------------|----------|--------------|
- c** Out of house and turn left onto Cedar Way. 1st right and 1st right again. End of road on left.
  - d** Down Ash Lane 2nd on left onto Cedar Way. Walk to end and turn right onto Ivy Cresc. Health Centre on Left.

# Number Patterns

## Exercise 1 – Page 30

<b>1</b>	5, 6	<b>2</b>	10, 12	<b>3</b>	11, 13	<b>4</b>	13, 16
<b>5</b>	17, 21	<b>6</b>	23, 27	<b>7</b>	19, 18	<b>8</b>	11, 9
<b>9</b>	49, 51	<b>10</b>	40, 42	<b>11</b>	28, 31	<b>12</b>	29, 32
<b>13</b>	27, 24	<b>14</b>	39, 36	<b>15</b>	37, 41	<b>16</b>	68, 72
<b>17</b>	8, 9	<b>18</b>	13, 14	<b>19</b>	12, 14	<b>20</b>	18, 21
<b>21</b>	30, 35	<b>22</b>	13, 15	<b>23</b>	20, 23	<b>24</b>	13, 11
<b>25</b>	12, 6	<b>26</b>	22, 25	<b>27</b>	7, 3		

## Exercise 2 – Page 30

<b>1</b>	54, 61	<b>2</b>	18, 7	<b>3</b>	74, 85	<b>4</b>	9, 1
<b>5</b>	3, 3½	<b>6</b>	5½, 5	<b>7</b>	3.7, 4.4	<b>8</b>	2.1, 1
<b>9</b>	78, 91	<b>10</b>	20, 5	<b>11</b>	1½, 1¾	<b>12</b>	8, 9½
<b>13</b>	21, 28	<b>14</b>	36, 49	<b>15</b>	32, 44	<b>16</b>	46, 64
<b>17</b>	39, 52	<b>18</b>	75, 105	<b>19</b>	60, 84	<b>20</b>	7, 7
<b>21</b>	6, 5	<b>22</b>	43, 45	<b>23</b>	32, 64	<b>24</b>	243, 729
<b>25</b>	96, 192	<b>26</b>	10, 5				

## Exercise 3 – Page 31

<b>1</b>	19, 11, 13 ... 25	× by 2 then add 1
<b>2</b>	11, 14, 17 ... 29	× by 3 then subtract 1
<b>3</b>	13, 16, 19 ... 34	× by 3 then add 1
<b>4</b>	15, 19, 23 ... 79	× by 4 then subtract 1
<b>5</b>	11, 13, 15 ... 27	× by 2 then add 3
<b>6</b>	14, 18, 22 ... 38	× by 2 then subtract 2
<b>7</b>	10, 13, 16 ... 25	× by 3 then subtract 2
<b>8</b>	19, 23, 27 ... 51	× by 4 then add 3
<b>9</b>	19, 24, 29 ... 99	× by 5 then subtract 1
<b>10</b>	9, 12, 15 ... 30	× by 3 then subtract 3
<b>11</b>	17, 20, 23 ... 44	× by 3 then add 5
<b>12</b>	23, 28, 33 ... 53	× by 5 then add 3

## Exercise 4 – Page 32

1	114, 17, 21 ... 92	$B = 3A + 2$
2	12, 14, 16 ... 54	$D = 2C + 4$
3	7, 9, 11 ... 99	$F = 2E - 1$
4	10, 13, 16 ... 298	$H = 3G - 2$
5	13, 16, 19... 181	$K = 3J + 1$
6	17, 21, 25 ... 101	$M = 4L + 1$
7	19, 24, 29 ... 149	$P = 5N - 1$
8	13, 17, 21 ... 157	$R = 4Q - 3$
9	13, 15, 17... 75	$T = 2S + 5$
10	22, 27, 32 ... 202	$V = 5U + 2$
11	19, 23, 27 ... 63	$T = 4S + 3$
12	24, 30, 36 ... 300	$Z = 6Y$

## Exercise 5 – Page 33

1	110, 13, 16 ... 40 $b = 3r + 1$	× by 3 then add 1
2	5, 7, 9, 11, 13, 15 ... 27 $c = 2n + 3$	× by 2 then add 3
3	7, 10, 13, 17... 34 $c = 3n - 2$	× by 3 then subtract 2
4	7, 9, 11, 13... 25 $l = 2w + 1$	× by 2 then add 1
5	5, 8, 11, 14, 17, 20 ... 35 $s = 3n + 2$	× by 3 then add 2
6	4, 6, 8, 10...22 ... 42 $p = 2d + 2$	× by 2 then add 2
7	16, 19, 22, 25... 61 $l = 3c + 1$	× by 3 then add 1
8	7, 9, 11, 13, 15... 29 $m = 2c + 3$	× by 2 then add 3

- 9** 10, 12, 14, 16... 22  $\times$  by 2 then add 4  
 $t = 2r + 4$
- 10** 14, 18, 22, 16 ... 46  $\times$  by 4 then add 2  
 $c = 4l + 2$
- 11** 10, 13, 16 ... 92  $\times$  by 3 then add 1  
 $b = 3r + 1$

### Exercise 6 – Page 39

- 1** 17, 9, 11, 13 ... 39  $\times$  by 2 then subtract 1  
 $N = 2L - 1$  No, odd numbers
- 2** 16, 21, 26 ... 61  $\times$  by 5 then add 1  
 $w = 5s + 1$
- 3** 5, 8, 11, 14, 17  $\times$  by 3 then add 2  
 $d = 3s + 2$
- 4** 5, 9, 13, 17, 21, 25... 53  $\times$  by 4 then add 1  
 $m = 4s + 1$
- 5** 10, 13, 16 ... 46  $\times$  by 3 then add 1  
 $b = 3n + 1$
- 6** 14, 19, 24 ... 54  $\times$  by 5 then subtract 1  
 $r = 5s - 1$
- 7** 14, 18, 22 ... 50  $\times$  by 4 then add 2  
 $b = 4t + 2$
- 8** 8, 10, 12, 14 ... 42  $\times$  by 2 then add 2  
 $s = 2c + 2$
- 9** 7, 9, 11 ... 29  $\times$  by 2 then subtract 1  
 $p = 2s - 1$
- 10** 4 grey tiles per metre  $\times$  by 4  
 $G = 4L$   
 No, 39 cannot be divided by 4.