



# F

Knightswood  
Secondary  
School

**MATHEMATICS**  
**Standard Grade**  
Preliminary Exams  
December 2008

Foundation Level  
Paper 1 (non calculator)  
Time: 20 minutes

Name \_\_\_\_\_ Reg. Class 4R\_\_

Maths Teacher \_\_\_\_\_ Maths Class 4m\_\_

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Question	KU	RE
1a,b&c		
2		
3a		
3b		
4		
5		
6		
7		
8a		
8b		
Total p1	/12	/13
Total p2	/26	/27
Total p1 + p2	/38	/40
percentage	%	%

1. Work out the answers to the following.

(a)  $7.4 + 3.8$

WORKING	
ANSWER	

(1)

(b)  $205 \times 7$

WORKING	
ANSWER	

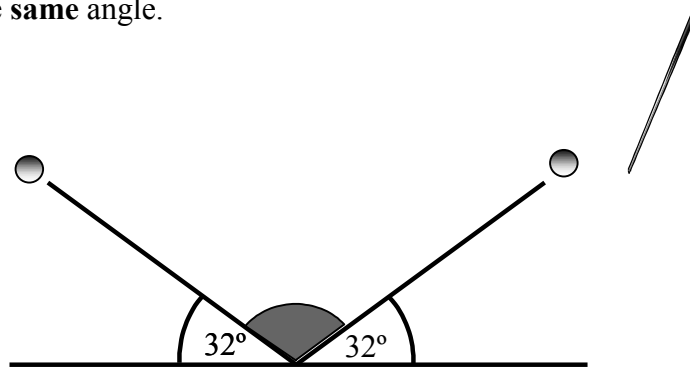
(1)

(c) 20% of £90

WORKING	
ANSWER	£

(2)

2. A ball hits the edge of a snooker table at an angle of  $32^\circ$  and rebounds from the edge at the **same** angle.



Calculate the size of the shaded angle.

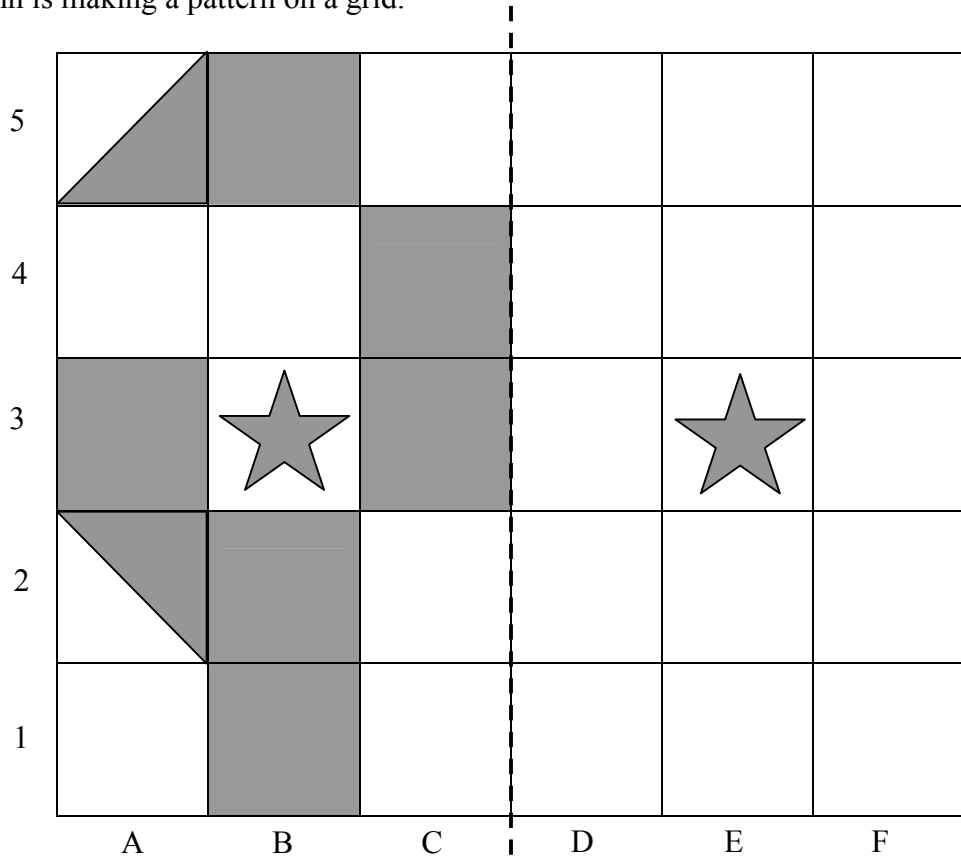
WORKING

ANSWER

°

(2)

3. John is making a pattern on a grid.



(a) One star is in box B3. In which box is the other star?

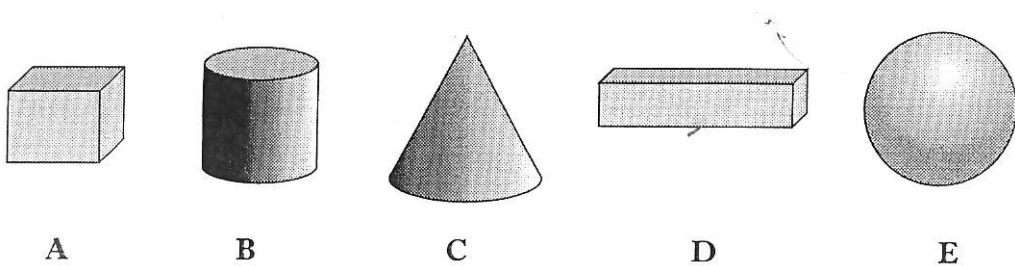
ANSWER	
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(1)

(b) Complete the pattern so that the dotted line is a line of symmetry.

(3)

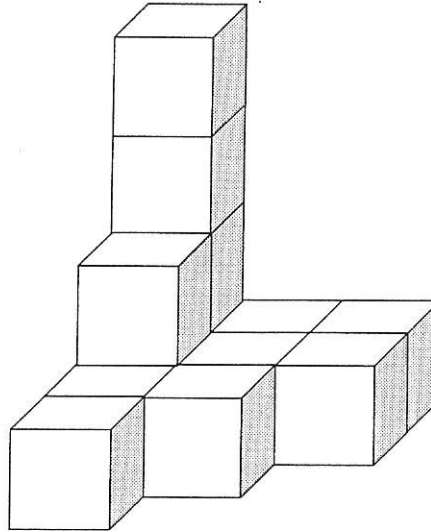
4. Which of these shapes is the cylinder?



ANSWER	
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(1)

5. Cubes are stacked as shown.  
How many cubes are there in this stack?



WORKING	
ANSWER	

cubes

(2)

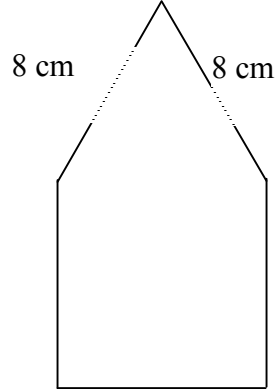
6. Lily has £2.10 and Thomas has £2.80.  
How much should Thomas give to Lily so that they both have the same amount of money?

WORKING	
ANSWER	

pence

(3)

7. A company's logo is made up a square with a triangle on top.  
 The sloping sides of the triangle are 8 centimetres long.  
 The perimeter of the logo is 34 centimetres long.

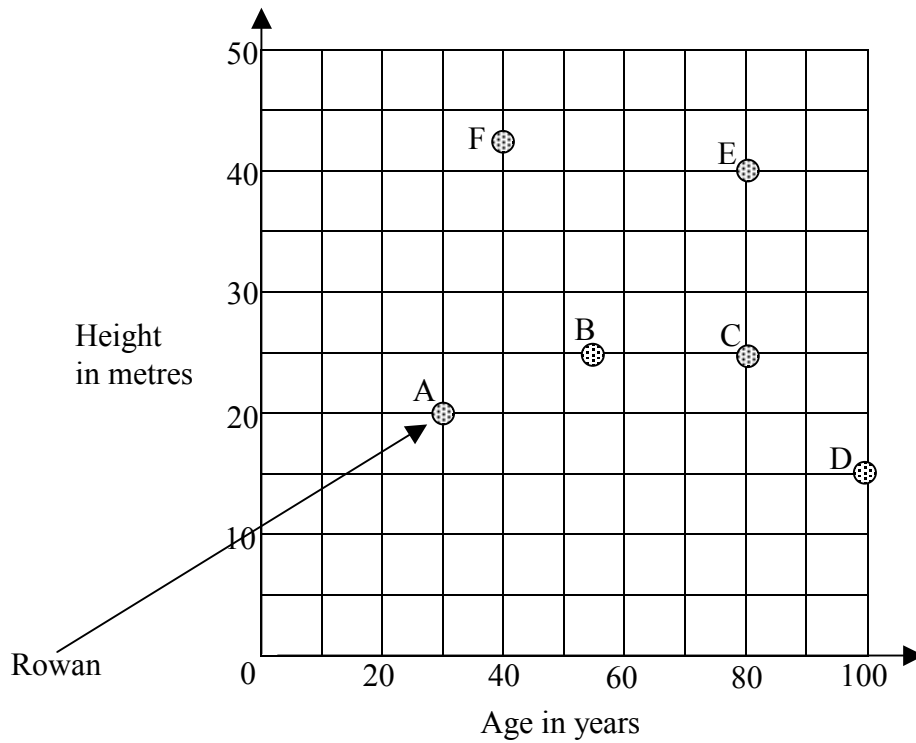


<b>WORKING</b>	
<b>ANSWER</b>	

centimetres

(4)

8. The graph shows the ages and heights of a group of trees in a garden.



(a) Dot A represents the rowan tree.

Write down the age and the height of the rowan tree.

ANSWER	Age:	years
ANSWER	Height:	metres

(2)

(b) Use the clues below to match the trees with the other dots.

The oak and the maple tree are the same height.

The beech and the oak tree were planted in the same year.

The ash is taller than the hawthorn.

WORKING					
ANSWER					
Name	Rowan	Oak	Beech	Ash	Hawthorn
Dot					

(3)

**Marking Instructions for Foundation Level - Paper 1 2008/2009**

	<b>Give 1 mark for each ●</b>	<b>Illustrations for awarding each mark</b>
<b>1(a)</b>	<b>ans: 11.2</b> ● <sup>1</sup> answer	● <sup>1</sup> 11.2 <b>1 mark KU</b>
<b>1(b)</b>	<b>ans: 1435</b> ● <sup>1</sup> answer	● <sup>1</sup> 1435 <b>1 mark KU</b>
<b>1(c)</b>	<b>ans: 3427</b> ● <sup>1</sup> strategy for finding a percentage ● <sup>2</sup> answer	● <sup>1</sup> $5 \times 60 = 300$ ● <sup>2</sup> $300 + 30 = 330$ <b>2 marks KU</b>
<b>2(a)</b>	<b>ans: 116°</b> ● <sup>1</sup> knows to add ● <sup>2</sup> subtract from 180	● <sup>1</sup> $32 + 32$ ● <sup>2</sup> $180 - 64 = 116^\circ$ <b>2 marks KU</b>
<b>3(a)</b>	<b>ans: E3</b> ● <sup>1</sup> information from grid	● <sup>1</sup> E3 <b>1 mark KU</b>
<b>3(b)</b>	<b>ans: diagram correctly drawn</b> ● <sup>1</sup> all six squares reflected ● <sup>2</sup> triangles in corners ● <sup>3</sup> correct orientation of triangles	● <sup>1</sup> all six squares reflected ● <sup>2</sup> triangles in corners ● <sup>3</sup> correct orientation of triangles <b>3 marks RE</b>
<b>4</b>	<b>ans: B</b> ● <sup>1</sup> identify solid	● <sup>1</sup> identify solid <b>1 mark KU</b>
<b>5</b>	<b>ans: 13</b> ● <sup>1</sup> count visible cubes ● <sup>2</sup> interpret unseen cubes	● <sup>1</sup> 11 ● <sup>2</sup> 2 <b>2 marks KU</b>
<b>6</b>	<b>ans: 35 pence</b> ● <sup>1</sup> strategy: add money ● <sup>2</sup> strategy: half the amount ● <sup>3</sup> strategy: calculate the difference	● <sup>1</sup> £4.90 ● <sup>2</sup> £2.45 ● <sup>3</sup> $£2.80 - 2.45 = £0.35$ <b>3 marks RE</b>
<b>7</b>	<b>ans: £105</b> ● <sup>1</sup> strategy: working backwards ● <sup>2</sup> subtract from total ● <sup>3</sup> know how to divide by 3 ● <sup>3</sup> solution	● <sup>1</sup> add sides given 16 cm ● <sup>2</sup> 18 ● <sup>3</sup> $\div 3$ ● <sup>3</sup> $18 \div 3 = 6$ <b>4 marks RE</b>

**Total marks: KU 12**

**RE 13**



# F

Knightswood  
Secondary  
School

**MATHEMATICS**  
**Standard Grade**  
Preliminary Exams  
December 2008

Foundation Level  
Paper 2  
Time: 40 minutes

Name \_\_\_\_\_ Reg. Class 4R\_\_

Maths Teacher \_\_\_\_\_ Maths Class 4m\_\_

Do not write below this line

Question	KU	RE
1		
2a&b		
3a&b		
4		
5a		
5b		
6		
7a		
7b		
8		
9a&b		
10a&b		
11		
12		
13		
14		
15		
Total p2	/26	/27

1. Masha bought 6 bath towels on the Internet for £45.70, plus £2.99 postage and packing.

Later she saw the same towels in a catalogue for £7.99 each, plus £1.50 postage and packing.

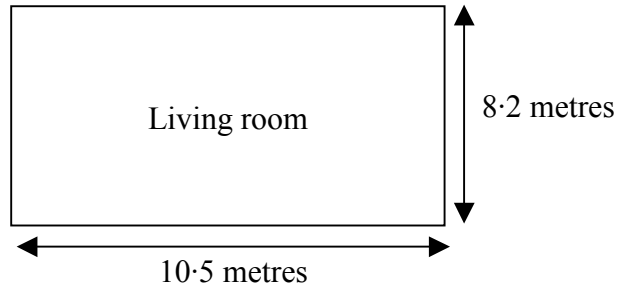
How much did she save buying them on the Internet?



WORKING	
ANSWER	£ _____

(4)

2. Bob and Beth want to put a new carpet in their living room.  
The floor of the living room measures 10.5 metres by 8.2 metres.



- (a) Calculate the area of the floor of the living room.

WORKING	
ANSWER	square metres

(2)

- (b) The carpet they chose costs £7.60 per square metre.  
How much will the carpet cost?

WORKING	
ANSWER	£

(2)



4. Mr Anwar paid £640 for his electricity bill last year.  
He saw the following advert in his local paper.

Switch-off your  
standby lights and  
save 17% on your bill



How much could he save if he switches off all the standby lights on his electrical goods?

WORKING

ANSWER

£

(3)

5. This is part of a holiday brochure. It shows the prices, per person, for a two week holiday in two different hotels during part of the summer.

Dates	Hotel Poseidon	Hotel Belview
May 2 – May 15	£245	£272
May 16 – May 29	£260	£298
May 30 – June 12	£270	£318
June 13 – June 26	£299	£346
June 27 – July 10	£340	£420

- (a) Bill goes on holiday on 16<sup>th</sup> May until 29<sup>th</sup> May and he stays at the Hotel Poseidon.

How much will it cost him?

ANSWER	
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(2)

- (b) Molly and her two friends have £1000 to spend on a holiday.

They want to go to the Hotel Belview for a two week holiday. They want to go as late in the summer as possible.

What is the latest date they can leave for their holiday?

**Show all your working.**

WORKING	
ANSWER	

(3)

6. Esme works as a machine operator in a factory.  
She earns £18 512 in a year.  
What is her weekly wage?



WORKING	
ANSWER	£ _____

(3)

7. Here is part of a train timetable.

	<b>Train 1</b>	<b>Train 2</b>	<b>Train 3</b>
Lanark	09 52	10 22	10 52
Carluke	10 02	10 32	11 02
Wishaw	10 08	10 38	11 08
Motherwell	10 20	10 50	11 20
Glasgow	10 55	11 20	11 55

- (a) Amanda takes the 09 52 train from Lanark to Glasgow.  
When will she arrive in Glasgow?

ANSWER	
--------	--

(1)

- (b) Amanda's friend Lewis boards a later train at Wishaw.  
This train arrives in Glasgow at 11 55.  
How long does his journey from Wishaw to Glasgow take?

WORKING	
ANSWER	_____ minutes

(3)

8. The formula below is used to find the expected height, in centimetres, of children between the ages of two and twelve years.

$$\text{Expected Height} = 5 \times \text{Age in years} + 80$$

What age is a child whose expected height is 100 centimetres?

WORKING	
ANSWER	

(3)

9. Ethan did a survey on how many books his friends were carrying in their school bags.

His results are recorded below.

5 6 4 5 5 7 3 8 6 9 8 5 7

- (a) Write down the mode.

ANSWER	
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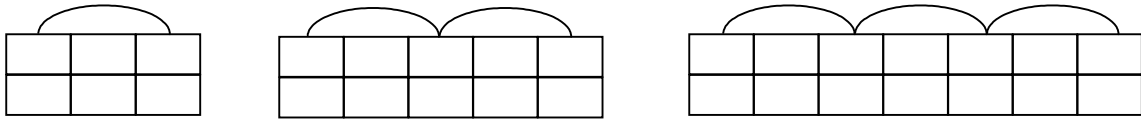
(1)

- (b) Find the mean number of books carried.

WORKING	
ANSWER	

(4)

10. A wall is made from rectangular bricks with curved bricks on top.



(a) Complete the table.

Number of curved bricks	1	2	3	4	5	6		12
Number of rectangular bricks								

WORKING	
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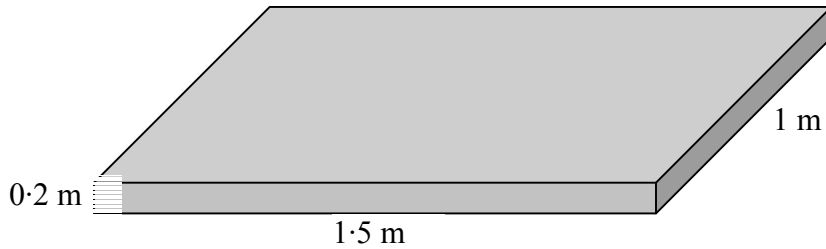
(4)

(b) Write down a rule for finding the number of rectangular bricks if you know the number of curved bricks.

RULE	
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(2)

11. A furniture company delivers its furniture in flat packs.  
 One flat pack is in the shape of a cuboid.  
 The cuboid is 1.5 metres long, 1 metre broad and 0.2 metres high.

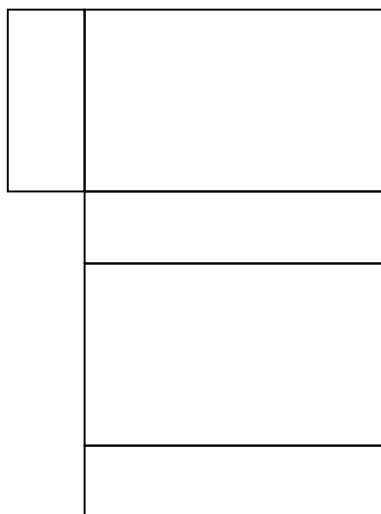


Find the volume of this cuboid.

WORKING	
ANSWER	

(2)

12. Part of the net of a cuboid is shown below.



Complete the net.

(1)

13. Mrs Wong is choosing a new car.

The *Colour* can be **Black** or **Red**  
 The *Style* can be **Saloon** or **Hatchback**  
 The *Engine Type* can be **Petrol** or **Diesel**

The table below shows one possible combination.

<i>Colour</i>	<i>Style</i>	<i>Engine Type</i>
<b>Black</b>	<b>Hatchback</b>	<b>Diesel</b>

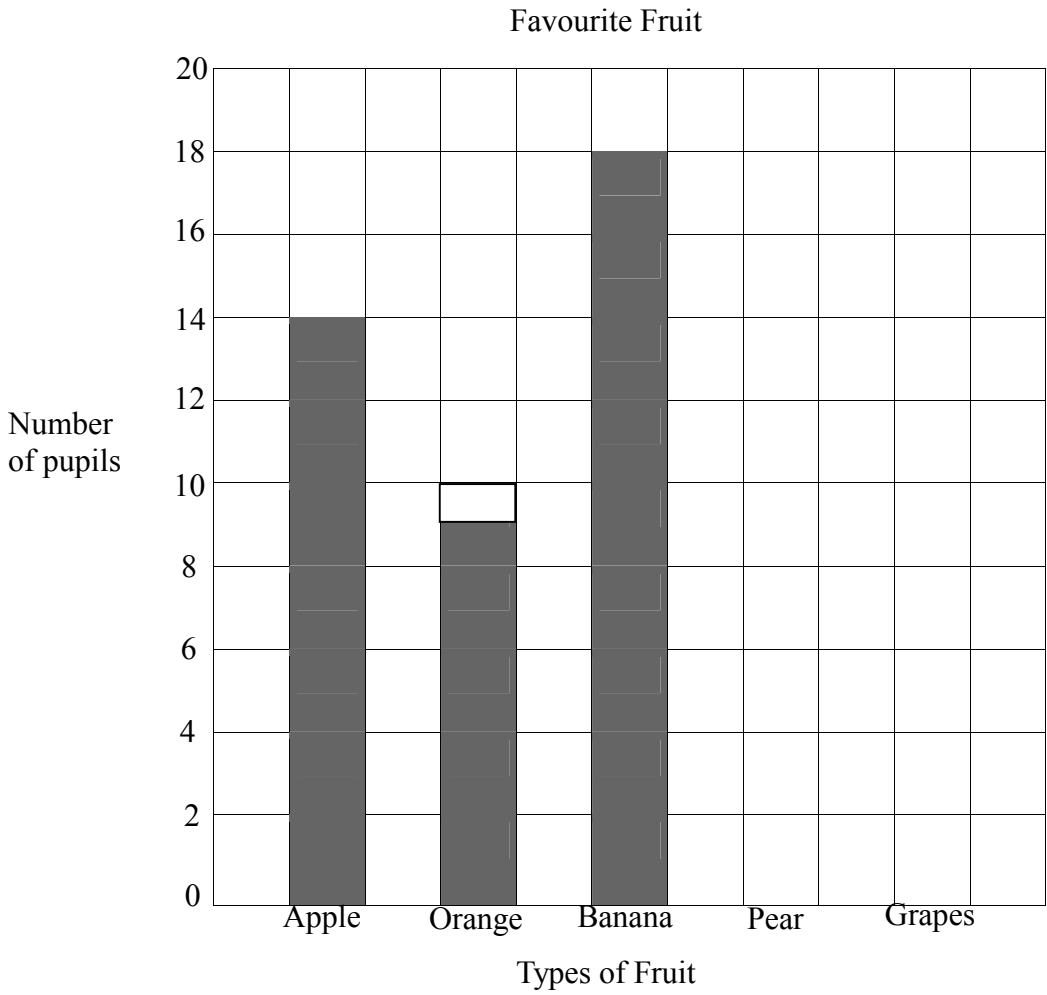
Complete the table to show five other possible combinations.

(3)

14. A group of pupils were asked which fruit was their favourite.  
The table shows the results.

Favourite Fruit	Number of Pupils
Apple	14
Orange	9
Banana	18
Pear	10
Grapes	3

Complete the bar graph to illustrate this information.



15. Mrs McLaughlin's class wants to raise £60 for charity.  
There are 30 pupils in the class and each pupil saves 5p per day.  
How many days will it take to raise £60?

WORKING	
ANSWER	

(4)

[END OF QUESTION PAPER]

**Marking Instructions for Foundation Level - Paper 2 2007/2008**

	<b>Give 1 mark for each •</b>	<b>Illustrations for awarding each mark</b>
<b>1(a)</b>	<b>ans: £0.75</b> <ul style="list-style-type: none"> <li>●<sup>1</sup> internet cost</li> <li>●<sup>2</sup> calculate cost of 6 towels</li> <li>●<sup>3</sup> know how to multiply cost by 6 and add postage</li> <li>●<sup>4</sup> calculate difference in costs</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> £48.69</li> <li>●<sup>2</sup> £47.94</li> <li>●<sup>3</sup> <math>6 \times £7.99 + £1.50 = £49.44</math></li> <li>●<sup>3</sup> £0.75</li> </ul> <p align="right"><b>4 marks RE</b></p>
<b>2(a)</b>	<b>ans: 86.4 m<sup>2</sup></b> <ul style="list-style-type: none"> <li>●<sup>1</sup> strategy: length <math>\times</math> breadth</li> <li>●<sup>2</sup> process data</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> <math>10.5 \times 8.2</math></li> <li>●<sup>2</sup> 86.1</li> </ul> <p align="right"><b>2 marks KU</b></p>
<b>2(b)</b>	<b>ans: £654.36</b> <ul style="list-style-type: none"> <li>●<sup>1</sup> know to multiply</li> <li>●<sup>2</sup> process data</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> <math>86.1 \times 7.60</math></li> <li>●<sup>2</sup> 654.36</li> </ul> <p align="right"><b>2 marks KU</b></p>
<b>3(a)</b>	<b>ans: 1.8 litres</b> <ul style="list-style-type: none"> <li>●<sup>1</sup> reading a scale</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> 1.8</li> </ul> <p align="right"><b>1 marks KU</b></p>
<b>3(b)</b>	<b>ans: 15 glasses</b> <ul style="list-style-type: none"> <li>●<sup>1</sup> conversion of units</li> <li>●<sup>2</sup> strategy: division</li> <li>●<sup>3</sup> process data</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> 1800 ml</li> <li>●<sup>2</sup> <math>1800 \div 120</math></li> <li>●<sup>3</sup> 5</li> </ul> <p align="right"><b>3 marks KU</b></p>
<b>4</b>	<b>ans: £108.80</b> <ul style="list-style-type: none"> <li>●<sup>1</sup> strategy: find a percentage</li> <li>●<sup>2</sup> strategy: find <math>17/100</math> or <math>\times 0.17</math></li> <li>●<sup>3</sup> process data</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> 17% of £640</li> <li>●<sup>2</sup> <math>17 \div 100 \times 640</math></li> <li>●<sup>3</sup> £108.80</li> </ul> <p align="right"><b>3 marks KU</b></p>
<b>5(a)</b>	<b>ans: £260</b> <ul style="list-style-type: none"> <li>●<sup>1</sup> interpreting information</li> <li>●<sup>2</sup> reading a table</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> evidence of using May 16–29 or Poseidon column</li> <li>●<sup>2</sup> correct reading £260</li> </ul> <p align="right"><b>2 marks KU</b></p>
<b>5(b)</b>	<b>ans: May 30<sup>th</sup></b> <ul style="list-style-type: none"> <li>●<sup>1</sup> strategy: dividing</li> <li>●<sup>2</sup> interpreting answer</li> <li>●<sup>3</sup> interpreting answer</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> <math>£1000 \div 3 = £333.33</math></li> <li>●<sup>2</sup> £318 from table</li> <li>●<sup>3</sup> May 30 – June 12</li> </ul> <p align="right"><b>3 marks RE</b></p>
<b>6</b>	<b>ans: £356</b> <ul style="list-style-type: none"> <li>●<sup>1</sup> interpret information</li> <li>●<sup>2</sup> strategy: divide</li> <li>●<sup>3</sup> process data</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> 52 weeks</li> <li>●<sup>2</sup> <math>£18512 \div 52</math></li> <li>●<sup>2</sup> £356</li> </ul> <p align="right"><b>3 marks KU</b></p>

<p><b>7(a)</b></p>	<p><b>ans: 10 55</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> reading a table</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> 10 55</li> </ul> <p style="text-align: right;"><b>1 mark KU</b></p>
<p><b>7(b)</b></p>	<p><b>ans: 10 55</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> interpret information</li> <li>●<sup>2</sup> calculate time interval</li> <li>●<sup>3</sup> answer</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> Lewis takes 10 52 train</li> <li>●<sup>2</sup> 11 08 to 11 55</li> <li>●<sup>3</sup> 47 minutes</li> </ul> <p style="text-align: right;"><b>3 marks RE</b></p>
<p><b>8</b></p>	<p><b>ans: 4 years old</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> form an equation</li> <li>●<sup>2</sup> start to solve equation</li> <li>●<sup>3</sup> answer</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> <math>100 = 5 \times \text{Age} + 80</math></li> <li>●<sup>2</sup> <math>5 \times \text{Age} = 20</math></li> <li>●<sup>2</sup> <math>\text{Age} = 4</math></li> </ul> <p style="text-align: right;"><b>3 marks RE</b></p>
<p><b>9(a)</b></p>	<p><b>ans: 5</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> find the mode</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> 5</li> </ul> <p style="text-align: right;"><b>1 mark KU</b></p>
<p><b>9(b)</b></p>	<p><b>ans: 6</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> know to add</li> <li>●<sup>2</sup> correct addition</li> <li>●<sup>3</sup> know how to divide by 13</li> <li>●<sup>4</sup> correct division</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> evidence of addition</li> <li>●<sup>2</sup> 78</li> <li>●<sup>2</sup> <math>78 \div 13</math></li> <li>●<sup>3</sup> 6</li> </ul> <p style="text-align: right;"><b>4 marks KU</b></p>
<p><b>10(a)</b></p>	<p><b>ans: 1 2 3 4 5 6 .... 12</b> <b>6 10 14 18 22 26 .... 50</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> interpret pattern</li> <li>●<sup>2</sup> extend pattern</li> <li>●<sup>3</sup> extend pattern</li> <li>●<sup>4</sup> extend pattern</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> 14</li> <li>●<sup>2</sup> 18</li> <li>●<sup>3</sup> 22 and 26</li> <li>●<sup>4</sup> 50</li> </ul> <p style="text-align: right;"><b>4 marks RE</b></p>
<p><b>10(b)</b></p>	<p><b>ans: Number of rectangular bricks = number of curved bricks <math>\times</math> 4 plus 2</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> know pattern based on 4 times table</li> <li>●<sup>2</sup> know to add 2</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> <math>\times 4</math></li> <li>●<sup>2</sup> <math>+ 2</math></li> </ul> <p style="text-align: right;"><b>2 marks RE</b></p>
<p><b>11</b></p>	<p><b>ans: 0.3 m<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> knows how to find volume</li> <li>●<sup>2</sup> answer</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> <math>0.2 \times 1.5 \times 1 = \dots</math></li> <li>●<sup>2</sup> 0.3 m<sup>3</sup></li> </ul> <p style="text-align: right;"><b>2 marks KU</b></p>
<p><b>12</b></p>	<p><b>ans: Net completed</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> complete the net</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> net completed</li> </ul> <p style="text-align: right;"><b>1 mark RE</b></p>

<p><b>13</b></p>	<p><b>ans: Table completed</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> complete 2 rows</li> <li>●<sup>2</sup> complete another 2 rows</li> <li>●<sup>3</sup> complete last row</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> Black-Hatchback-Petrol, Black-Saloon-Diesel</li> <li>●<sup>2</sup> Black-Saloon-Petrol Red-Hatchback-Diesel</li> <li>●<sup>3</sup> Red-Hatchback-Petrol</li> </ul> <p style="text-align: right;"><b>3 marks RE</b></p> <p><i>Other combinations are possible</i></p>
<p><b>14</b></p>	<p><b>ans: complete the bar graph</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> interpret information</li> <li>●<sup>1</sup> draw graph</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> bar at 10 for pear</li> <li>●<sup>1</sup> bar at 3 for grapes</li> </ul> <p style="text-align: right;"><b>2 marks KU</b></p>
<p><b>15</b></p>	<p><b>ans: 40 days</b></p> <ul style="list-style-type: none"> <li>●<sup>1</sup> interpret information</li> <li>●<sup>2</sup> change to £</li> <li>●<sup>3</sup> know to divide</li> <li>●<sup>3</sup> answer</li> </ul>	<ul style="list-style-type: none"> <li>●<sup>1</sup> <math>30 \times 5p = 150p</math></li> <li>●<sup>2</sup> £1.50</li> <li>●<sup>3</sup> <math>60 \div 1.50</math></li> <li>●<sup>3</sup> 40 days</li> </ul> <p style="text-align: right;"><b>4 marks RE</b></p>

**Total marks: KU 26 RE 27**

**Total Marks for Papers I and II:**

**KU 38**

**RE 40**

