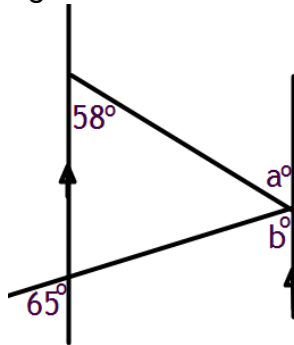# S1 Extension – Test 2 Revision

1. Percentages

1. In a sale all prices are reduced by 22·5%.
   Find the sale price of a golf club which normally costs £120.

2. A restaurant adds 20% VAT to all bills.
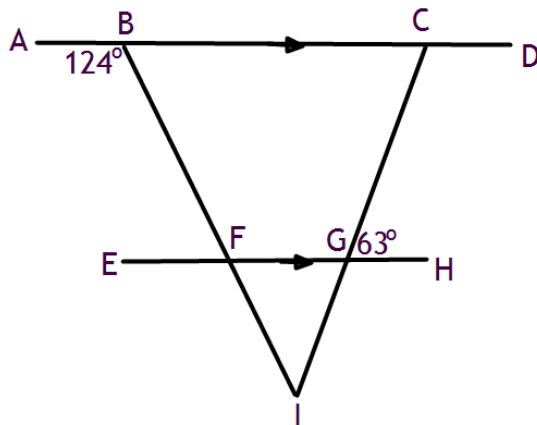   Calculate the total bill for a meal which costs £82.

2. Angles

1. Find the sizes of the angles marked a^o and b^o in the diagram below.

2. Calculate the sizes of angles FHG and KLM in the isosceles triangles shown below.
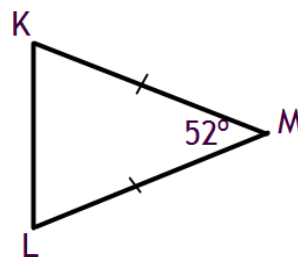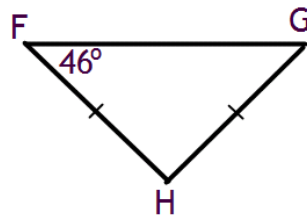
3. In the diagram below, lines AD and EH are parallel.
   Angle APF is 124° and angle CGH is 63°.

Calculate the size of angle FIG.

3. Equations
1. Solve   (a) $4x - 2 = x + 40$ (b) $3(2y + 5) - 4 = 35$

4. Time, Distance and Speed
1. Calculate the distance travelled in 2 hours 45 minutes at an average speed of 80 kilometres per hour.

2. How long (in hours and minutes) does it take for a journey of 75 miles at an average speed of 50 miles per hour?

3. Jason cycles 20 miles in I hour 15 minutes.   Calculate his average speed.

5. Information Handling
1. The pie chart shows how the pupils at Newdale Academy travelled to school each day.
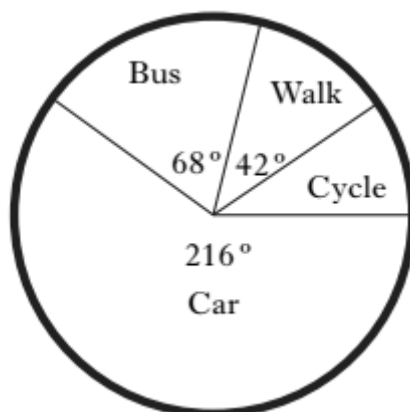
There are 900 pupils at Newdale Academy.
How many of the pupils (a) walk   (b) travel by car   (c) cycle ?

2. This season Newtown Wanderers won 22 games, lost 10 and drew 8.
Show this information in a pie chart.
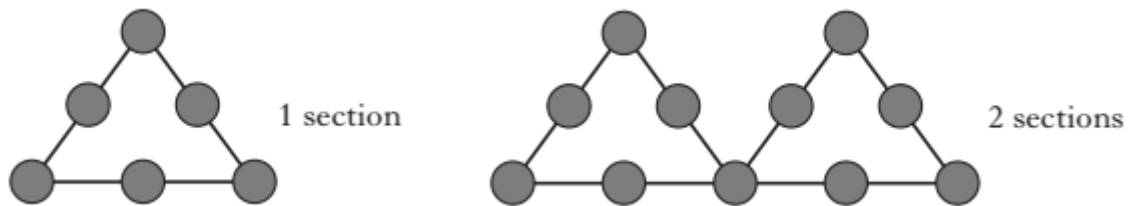

6. Indices
1. Simplify   (i) $n^7 \times n^2$ (ii) $p^{15} \div p^5$ (iii) $(x^4)^3$

7. Patterns and Relationships
1. Write down an expression for the nth term of the sequence whose first four terms are   (a) 7, 11, 15, 19   (b) 1, 4, 7, 10.

2. The entrance to an amusement arcade has coloured decorative lights.
   The lights are assembled in triangular sections as shown below.

1 section   2 sections

(a) Complete the table below.

Number of sections (S)	1	2	3	4	5		9
Number of lights (L)	6	11					

(b)   Write down a formula for calculating the number of lights (L)
       when you know the number of sections (S)

(c)   The entrance to the arcade has 81 lights. How many sections does it have?

ANSWERS

1. Percentages
1. £93   2. £98·40

2. Angles
1. a = 58°   b = 65°   2. FHG = 88° KLM = 64°   3. FIG = 61°

3. Equations
1. (a) x = 14   (b) y = 4

4. Time, Distance and Speed
1. 220km   2. 1 hour 30 minutes   3. 16 mph

5. Information Handling
1. (a) 104   (b) 540   (c) 95

6. Indices
1. (i) n^{14} (ii) p^3 (iii) x^{12}

7. Patterns and Relationships
1. (a) $4n + 2$ (b) $3n - 2$

2. (a)   (b) $L = 5S + 1$ (c) 16

Number of sections (S)	1	2	3	4	5		9
Number of lights (L)	6	11	16	21	26		46