CALCULATOR ALLOWED

	KU	RE

1. John drives from Edinburgh to Inverness at an average speed of 76 kilometres per hour.

   The journey takes him 3 hours and 45 minutes.

   How far is it from Edinburgh to Inverness ?

   2

2. Andrea sees this advertisement for a computer in CompCo.

   CompCo
   SPECIAL OFFER
   £779 + VAT (17·5%)

   OUR PROMISE
   If you find the same computer at a cheaper price within 1 month, we will **refund double the difference**.

   a) Andrea buys the computer from CompCo.   VAT is 17.5%

   What is the total cost of the computer ?

   Round your answer to the nearest penny.

   3

   b) One week later, Andrea sees the same computer in a different shop at £900 including VAT.

   She remembers the promise in the CompCo advertisement and returns to the shop to claim a refund.

   How much money should be refunded to her ?

   2

3, A column is in the shape of a cylinder.

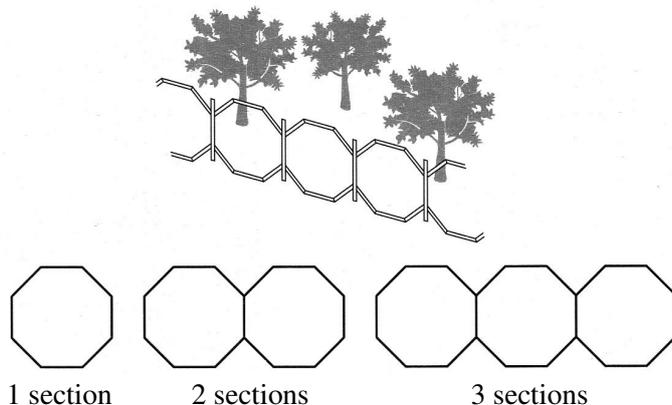   It is 450 centimetres high and its diameter is 40 centimetres.

   450 cm

   a) Find the volume of the column in cubic centimetres.

   2

   b) Write your answer to (a) in scientific notation.

   1

   |←— 40 cm —→|

	KU	RE
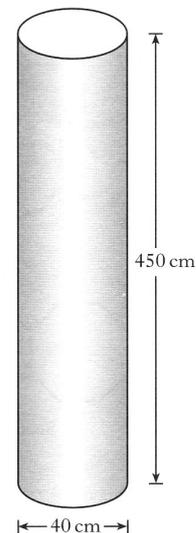
4. A metal fence for a garden is made by joining iron bars as shown below.

1 section   2 sections   3 sections

a) Complete this table

Number of sections (s)	1	2	3	4		12
Number of iron bars (b)	8		22			

2

b) Find a formula for calculating the number of iron bars (b),
   when you know the number of sections (s).

2

c) A fence has been made by joining 176 iron bars.

   How many sections are in this fence ?

2

5. A sum of £1640 is invested in a bank.

   The rate of interest is 4.5% per annum.

   Calculate the simple interest gained in 9 months.

3

6. PQRS is a rhombus.

   Its diagonals PR and SQ are 20 centimetres

   and 12 centimetres long respectively.
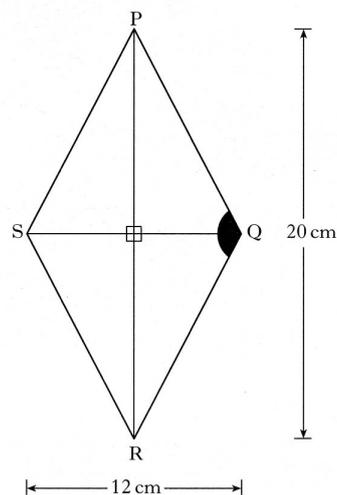
   Calculate the size of the shaded angle PQR.

   Do not use a scale drawing.
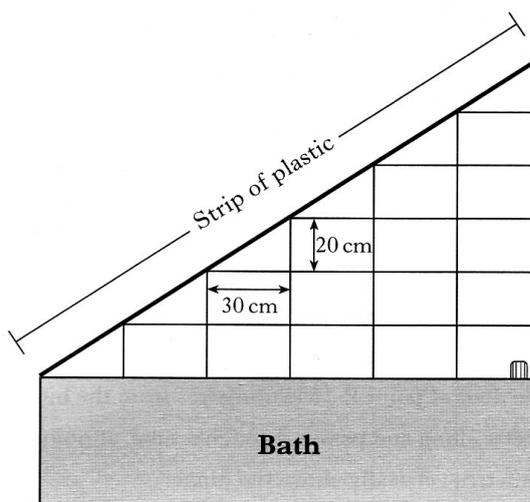
4

	KU	RE

7.   The diagram below shows the wall
     Jamie has tiled above the bath
     in his house.

     He used rectangular tiles, some of
     which he halved.

     The length of each tile
     is 30 centimetres.

     The breadth of each tile
     is 20 centimetres.

     Strip of plastic

     20 cm

     30 cm

     Bath

     A strip of plastic is fitted along the top of the tiles.

     Calculate the length of the strip of plastic.   4

8.   A cabinet has a door that opens downwards
     until it is at right angles to the front of
     the cabinet.

     tube

     rod

     A rod is pinned to the door at point P,
     15 centimetres from the hinge, H.

     hinge   pin

     The rod is 35 centimetres long and passes
     through a tube at point T.

     door

     This tube is 20 centimetres vertically above
     the hinge.
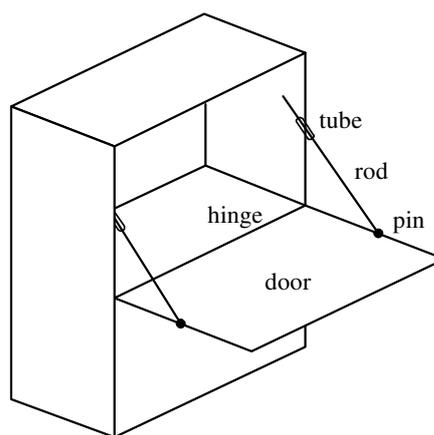
     Diagram 1

     T

     a)   Diagram 2 shows the positions of
            points P, T and H when the door
            is fully open.
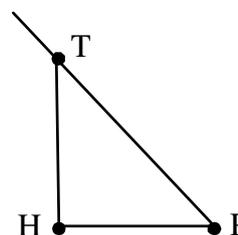
            Draw this diagram to a scale of 1 : 2   H   P   4

     Diagram 2

     b)   Use your scale drawing to find the actual length of the rod
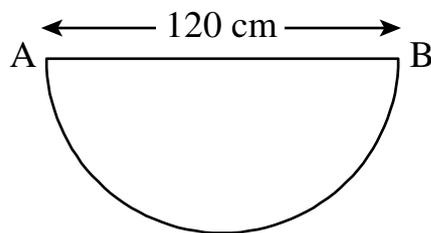   between points P and T.   2

	KU	RE

9.   a)   Solve algebraically the equation

$$4(3x+2)=68$$

KU: **3**

b)   Factorise

$$10y+15$$

KU: **2**

10.   A joiner is making tables for a new coffee shop.
The shape of the top of the table is a semi-circle as shown below.
AB = 120 centimetres

The top of the table is made of wood and a metal edge is to be fixed to its perimeter.

a)   Calculate the total length of the metal edge.

KU: **3**

b)   The coffee shop needs 16 tables

The joiner has 50 metres of the metal edge in his workshop.

Will this be enough for all 16 tables ?

Give a reason for your answer.

RE: **2**

11.   The Davidson family is planning to buy a new kitchen using hire purchase.

The cash price of the kitchen is £6300.

The hire purchase price is 22% more than the cash price.

The hire purchase agreement requires a deposit, which is 15% of the cash price, followed by 60 equal instalments

Calculate the cost of each instalment.

RE: **4**

END OF QUESTION PAPER

TOTALS   KU: **23**   RE: **24**