SAMPLE QUESTIONS

ROYAL HOSPITAL SCHOOL

Year 7 Entrance Examination in

MATHEMATICS

The marks available for each question part are shown in round brackets e.g. **(2).** We would suggest that each question should take approximately the same number of minutes as the question is worth i.e. a 2 point question should take around 2 minutes to answer.

In the actual 45 minute assessment there will be 17 questions. They should all be attempted, and all working **MUST** be shown on the question paper.

Answers should be written in the space provided.

CALCULATORS **ARE NOT** ALLOWED.

Name: ....

Date: ....

1) Jim buys 7 pens. Each pen costs 40p.

Jim pays with a £5 note. Work out the change from £5.

£………………………………………………….

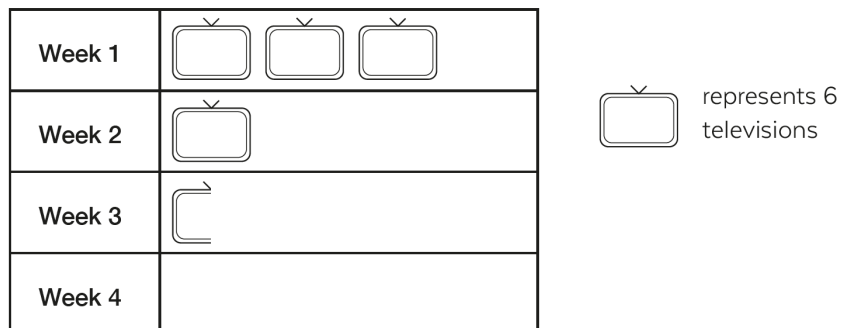**(2)**

2) At midnight the temperature in a garden was -3°C. By noon the temperature had risen by 7°C.

Work out the temperature at noon.

°C

(1)

3) The pictogram gives information about the number of televisions sold from a shop in each of the first 3 weeks in May.

Week 1	[TV][TV][TV]
Week 2	[TV]
Week 3	[partial TV]
Week 4	

[TV] represents 6 televisions

(a) Write down the number of televisions sold from the shop in Week 3.

(b) The shop sold 24 televisions in Week 4. Draw the symbols to show this on the pictogram.

(c) How many televisions did the shop sell altogether in this 4-week period?

(3)

4) Here is a number machine:

input $\longrightarrow$ x9 $\longrightarrow$ output
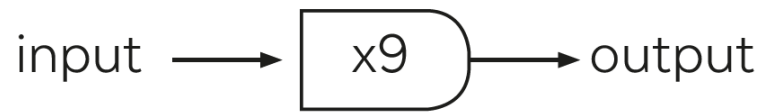
(a) Work out the output when the input is 5.

(1)

(b) Work out the input when the output is 36.

(2)

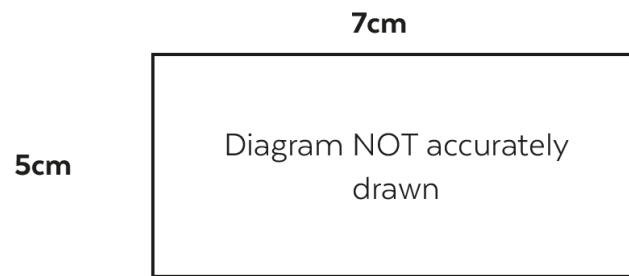5) Shelley sat 5 maths tests. Each test was out of 10.

Her marks were:

3 7 2 1 7

Work out the mean of these marks.

(2)

6)   Here is a rectangle:

7cm

5cm

Diagram NOT accurately
drawn

(a)   Work out the perimeter.

…………………………………………cm

(b)   Work out the area of the rectangle.

…………………………………………cm²

(2)

7)   Work out:

(a)   63 x 5

(1)

(b)   47 x 24

(3)

8)   ABC is a straight line.

Diagram NOT accurately drawn
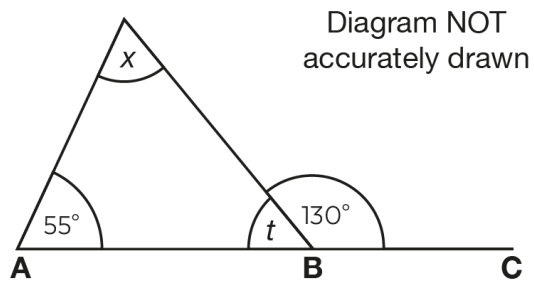
(a)   Work out the value of t.

.............................°

(1)

(b)   Work out the value of x.
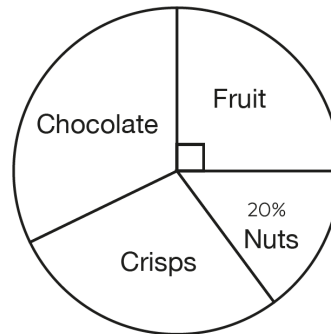
.................................°

(2)

9)   Shade one more square to make a pattern with exactly 1 line of symmetry.
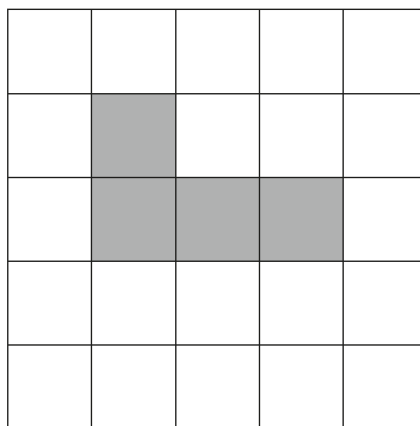
(1)

10) The pie chart gives information about people's favourite snacks.

The number of people who said 'Chocolate' is the same as the number of people who said 'Crisps'.

Diagram NOT
accurately drawn

Work out the percentage who said 'Chocolate'.

%

(3)

11) Alice has 92 bottles to put into crates. Each crate holds 8 bottles.

Every bottle must be put in a crate. How many crates does Alice need?

(2)

12) Work out:

(a) (3 + 4) x 2

(b) 5 + 8 x 7

(2)

13) Lessons finish in Ally's school at 2.15pm.

Ally takes 10 minutes to walk to chess club after lessons finish. Chess club lasts ¾ of an hour.
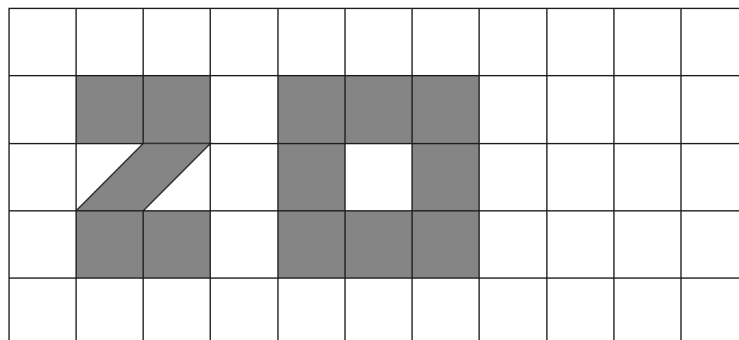
It then takes him 15 minutes to get home. Work out the time that Ally gets home.

(3)

14) John makes metal letters to sell.

The diagram shows a grid with letters on that spell the name Zo.

John charges £10 for a name plus £2.50 for each square centimetre of letter. Work out the total cost for the name Zo.

£…………………………………………….

(3)

15) Kate thinks of a number. If she multiplies her number by three and adds two, the answer is 53.

What is Kate's number?

....

(2)

16) In 2014, the price of a car was £7000. In 2015, the price increased by 10%.

Work out the increased price.

£...............................

(1)

17) Here is a cuboid.

Work out the volume of the cuboid.

4cm

10cm

3cm
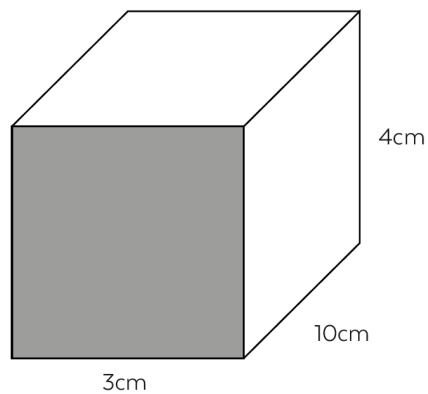
....cm³

(2)

18) Sophy makes pink paint by mixing 3 pots of white paint with 5 pots of red paint.
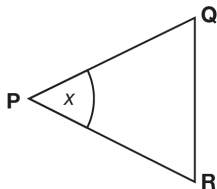

Sophy needs to make 24 pots of pink paint.

Work out how many pots of red paint she will need.

....

(2)

19) Work out $\dfrac{3}{9} + \dfrac{2}{9}$

....

(1)

20) (a) Triangle PQR is equilateral. Work out the size of angle x.

....°

(1)

(b) Triangle ABC is isosceles. Work out the size of angle y.

....°
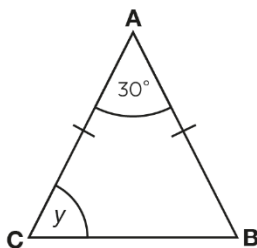
(2)

21) This is a cube. Each side of the cube is 5cm

(a) Work out the area of a face.
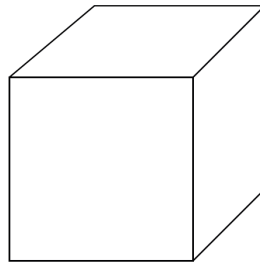
………………………………………..cm²

(1)

(b) Work out the *Surface Area* of the cube

…………………………cm²

(2)

22) In an election, Simon got 90 votes.

Simon got 60% of the total votes in the election. Work out the total number of votes.

………………………………

(1)

23)   The table shows the average temperature of six cities in February.

City	Minimum Temp °C
London	2°C
Moscow	-9°C
Paris	3°C
Perth	18°C
Ottawa	-10°C

(a) Write down the lowest temperature.

………………………………………

(1)

(b) Work out the range of temperatures.

………………………………………

(2)

In Colchester, the temperature was 15°C higher than the temperature in Ottawa.

(c) Work out the temperature in Colchester.

……………………………………….

(1)

24)   Tracy uses 150g of butter to make 8 cupcakes.

(a)   How much butter will she need to make 40 cupcakes?

………………………………………g

(2)

Ben has 375g of butter.

(b)   How many cupcakes could Ben make?

……………………………………..

(3)

26)   (a) Write ¼ as a decimal.

....
(1)

        (b) Write 0.8 as a percentage.

.... %
(1)

        (c) Write the ratio 2 : 6 in its simplest form.

(1)

27)   Write down the prime factors of 84

(2)

28)   Emily and Lucy go to the cinema.

        The tickets cost £8.60 each. Emily pays for both tickets.

        How much change does she get from a £20 note?

£...............................
(2)