

GCSE Mathematics

2019 Predicted Paper 1 (Non-Calculator)

1MA1

**Foundation Tier (1hr 40mins)**

**Remember***: These questions are just a guide. There are no guarantees that these questions/topics will come up! So, revise all you can before the calculator exams!*

**Instructions**

* Use **black** ink or ball-point pen.
* Answer **all** questions.
* Answer the questions in the spaces provided

– *there may be more space than you need*

* You must show all your working
* **Calculators may be used**
* Diagrams are **NOT** accurately drawn, unless otherwise indicated

**Information**

* The total mark for this paper is **110**.
* The marks for **each** question are shown in brackets  
  – *use this as a guide as to how much time to spend on each question*.

**Advice**

* Read each question carefully before you start to answer it.
* Keep an eye on time.
* Try to answer every question.

Check your answers if you have time at the end.

**1.** Mr Jones gave four of his students a test.

The total number of marks for the test is 80

Jamie got  of the marks.

Andy got  of the marks.

Robbie got  of the marks.

Davy got of the marks.

Write the fractions in order of size.

Start with the smallest fraction.

……..............................................................................................................................................

**(Total 3 mark)**

**2.** An ice cream van has this price list.

|  |
| --- |
| **Price List**  Choc Ice £1.25  Tub £1.15  Cone 85p |

Mitch only has these three coins.

He has no other money.



Mitch wants to buy a choc ice, a tub and 2 cones.

Has Mitch got enough money?

You must show your working.

**(Total 3 marks)**

**3** Here is a list of 10 numbers.

1 3 3 5 5 7 8 8 8 12

(a) Work out the range.

.......................................................

**(1)**

(b) Find the mode.

.......................................................

**(1)**

One of the 10 numbers is picked at random.

(c) Write down the probability that this number is 7

.......................................................

**(1)**

**(Total for Question 3 is 3 marks)**

**4** Change 7500 grams into kilograms.

....................................................... kilograms

**(Total for Question 4 is 1 mark)**

**5** Write  as a fraction in its simplest form.

.......................................................

**(Total for Question 5 is 1 mark)**

**6** Here is a centimetre grid.



(a) Write down the coordinates of the point *P*.

(..................... , .....................)

**(1)**

(b) Plot the point with coordinates (−1, −2)

Label this point *R*.

**(1)**

(c) Find the area of triangle *STU*.

....................................................... cm2

**(2)**

**(Total for Question 6 is 4 marks)**

**7** Polly has a full 5 kg sack of rice.

She pours the riced from this sack into bags.

She fills as many bags as possible.

Each full bag contains 350 g of rice.

(*a*) 1 kg = 1000 g

Convert 5 kg to grams.

....................................................... grams

**(1)**

(*b*) Use your answer to part (*a*) to help you work out how many bags Polly filled from this bag of rice.

......................................................

**(2)**

Polly assumes that the rice from two sacks will fill twice as many bags as the rice

from one sack.

(*c*) Is Polly correct?

You must give a reason for your answer.

Use these questions to help you:

• How many grams of rice do two sacks contain?

• How many bags could Polly fill from two sacks of rice?

......................................................................................................................................................

......................................................................................................................................................

**(1)**

**(Total for Question 7 is 4 marks)**

**8**



(*a*)Write down the coordinates of point *A*.

( .......................... , ..........................)

**(1)**

(*b*)On the grid, mark with a cross (**×**) the point (2, 3)

Label this point *B*.

**(1)**

(*c*)On the grid, draw the line with equation *x* = −4

**(1)**

**(Total for Question 8 is 3 marks)**

**9** Claire buys a new car for £5700.

She pays a deposit of 12%

(*a*) Multiply £5700 by 0.12 to work out the value of the deposit Claire pays.

.......................................................

**(1)**

Claire then pays the rest of the cost in 15 equal monthly payments.

(*b*) Use your answer part (*a*) to work out how much Claire has left to pay in total.

.......................................................

(*c*) Use your answer to part (*b*) to help you work out the value of each of Claire’s monthly payments.

£ .......................................................

**(2)**

**(Total for Question 9 is 3 marks)**

**10.** (*a*) Write 0.00385 in standard form.

..............................................

**(1)**

(*b*) Write 7.291 × 105 as an ordinary number.

.............................................

**(1)**

(*c*) Work out (2.4 × 1010) ÷ (6 × 10-2)

Give your answer in standard form.

..............................................

**(2)**

**(Total for Question 10 4 marks)**

**11** Food Mart and Jan’s Store sell boxes of the same type of breakfast cereal.

Each shop has a special offer.



Which box of cereal is the better value for money?

You must show your working.

**(Total for Question 11 is 4 marks)**

**12** A farmer has 20 boxes of eggs.

There are 6 eggs in each box.

Write, as a ratio, the number of eggs in two boxes to the total number of eggs.

Give your answer in its simplest form.

.......................................................

**(Total for Question 12 is 2 marks)**

**13** Year 9 students from Halle School were asked to choose one language to study.

The table shows information about their choices.

|  |  |  |
| --- | --- | --- |
| **Language** | **Number of students** |  |
| French | 56 |  |
| Spanish | 40 |  |
| German | 24 |  |

(*a*)Draw an accurate pie chart to show this information.



**(3)**

Year 9 students from Lowry School were also asked to choose one language to study.

This accurate pie chart shows information about their choices.



Shameena says,

“The pie chart shows that French was chosen by more Year 9 students at

Lowry School than at Halle School.”

(*b*)Is Shameena right?

You must explain your answer.

......................................................................................................................................................

......................................................................................................................................................

......................................................................................................................................................

**(1)**

**(Total for Question 13 is 4 marks)**

**14** Here are a triangle and a rectangle.



The area of the rectangle is 6 times the area of the triangle.

Work out the width of the rectangle.

...................................................... cm

**(Total for Question 14 is 4 marks)**

**15**



The area of square *ABCD* is 10 cm2.

Show that *x*2 + 6*x* = 1

**(Total for Question 15 is 3 marks)**

**16** This rectangular frame is made from 5 straight pieces of metal.



The weight of the metal is 1.5 kg per metre.

Work out the total weight of the metal in the frame.

...................................................... kg

**(Total for Question 16 is 5 marks)**

1. There are 60 students at a college.

20 students study both French and Spanish.

13 students study French but not Spanish.

A total of 43 students study Spanish.

(a)Complete the Venn diagram for this information.



**(3)**

One of the students at the college is to be selected at random.

(b) Write down the probability that this student studies neither French nor Spanish.

.......................................................

**(1)**

**(Total for Question 17 is 4 marks)**

1. There are only blue counters, green counters, red counters and yellow counters in a bag.

Olga is going to take at random a counter from the bag.

The table shows the probability that Olga will take a blue counter and the probability

that she will take a yellow counter.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Colour** | blue | green | red | yellow |
| **Probability** | 0.4 |  |  | 0.15 |

The number of red counters in the bag is 4 times the number of green counters in the bag.

Complete the table.

**(Total for Question 18 is 3 marks)**

**19.** (a) Solve 3(*x* + 2) = 4

*x* = …………………

**(2)**

(b) Solve   – 5 = 7

*x* = …………………

**(3)**

**(Total for Question 19 is 5 marks)**

1. In the space below, use ruler and compasses to construct the perpendicular bisector of line *AB*.

****

**(Total for Question 20 is 2 marks)**

1. Expand and simplify (*x* + 2)(*x* + 8)(*x* – 4)

.................................................................................

**(Total for Question 21 is 3 marks)**

1. Solve the simultaneous equations

4*x* + 2*y* = 7

3*x* – 5*y* = –24

*x* = .........................................

*y* = .........................................

**(Total for Question 22 is 4 marks)**

1. *PQR* is an isosceles triangle.

**

*PQ* = *PR*

All the angles are in degrees.

Work out the value of *x*.

*x* = .........................................

**(Total for Question 23 is 4 marks)**

**24** The diagram shows a square *ABCD* with sides of length 20 cm.

It also shows a semicircle and an arc of a circle.

**

*AB* is the diameter of the semicircle.

*AC* is an arc of a circle with centre *B*.

Show that 

**(Total for Question 24 is 4 marks)**

**25** The size of each interior angle of a regular polygon is 11 times the size of each exterior angle.

Work out how many sides the polygon has.

......................................................

**(Total for Question 25 is 3 marks)**

**26** The equation of the line L1 is *y* = 3*x* – 2

The equation of the line L2 is 3*y* – 9*x* + 5 = 0

Show that these two lines are parallel.

**(Total for Question 26 is 2 marks)**

**27**

**

*ABCD* is a parallelogram.

The diagonals of the parallelogram intersect at *O*.

 = **a** and  = **b**

(*a*)Find, in terms of **b**, the vector .

.......................................................

**(1)**

(*b*)Find, in terms of **a** and **b**, the vector .

.......................................................

**(1)**

(*c*)Find, in terms of **a** and **b**, the vector .

.......................................................

**(1)**

**(Total for Question 27 is 3 marks)**

**END OF QUESTIONS**