

Paper Reference 4MA1/1F
Pearson Edexcel
International GCSE

Total Marks

Mathematics A

Level 1/2

Paper 1F

(Calculator)

Foundation Tier

Monday 7 January 2019 – Morning

Time: 2 hours plus your additional time allowance.

In the boxes below, write your name, centre number and candidate number.

| | | | | | |
|-----------------------------|--|--|--|--|--|
| Surname | | | | | |
| Other names | | | | | |
| Centre Number | | | | | |
| Candidate Number | | | | | |

X59016A

YOU MUST HAVE

Ruler, protractor, compasses, writing and drawing equipment. Calculator. Tracing paper may be used.

YOU WILL BE GIVEN

Diagram Book

Formulae Pages

Shapes for Question 16(a), (b) and (c)

INSTRUCTIONS

Answer ALL questions.

Without sufficient working, correct answers may be awarded no marks.

Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – there may be more space than you need.

CALCULATORS MAY BE USED.

You must NOT write anything on the Formulae Pages. Anything you write on the Formulae Pages will gain NO credit.

INFORMATION

The total mark for this paper is 100

**The marks for EACH question are shown in brackets
– use this as a guide as to how much time to spend on
each question.**

There may be spare copies of some diagrams.

ADVICE

**Read each question carefully before you start to
answer it.**

Check your answers if you have time at the end.

Answer ALL TWENTY questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. (a) Write these five numbers in order of size.
Start with the smallest number.
(1 mark)

73 138 36 219 89

- (b) Write in figures the number two thousand and eighteen.
(1 mark)

- (c) Write in words the number 4309
(1 mark)

(continued on the next page)

Turn over

1. continued.

- (d) Write down the value of the 7 in 9715
(1 mark)

- (e) Write the number 286 correct to the nearest 10
(1 mark)

- (f) Work out $\frac{4}{5}$ of 185
(2 marks)

(Total for Question 1 is 7 marks)

Turn over

2. Look at the diagram for Question 2 in the Diagram Book.

The pictogram shows some information about the number of books read by Theodore during each of five weeks.

- (a) During which week did Theodore read the greatest number of books?
(1 mark)

Week _____

(continued on the next page)

2. continued.

Theodore read **16** books during Week 1

(b) (i) How many books does

| | |
|--|--|
| | |
|--|--|

 represent?

(ii) How many books did Theodore read during Week 2?

(iii) How many books did Theodore read during Week 5?

(3 marks)

(Total for Question 2 is 4 marks)

Turn over

3. Look at the diagram for Question 3 in the Diagram Book.

It shows a sequence of three patterns made from identical pentagons: Pattern number 1, Pattern number 2 and Pattern number 3

- (a) (i) Work out the number of pentagons in Pattern number 4

- (ii) Explain how you worked out your answer.
(2 marks)

(continued on the next page)

Turn over

3. continued.

A different sequence of patterns is made from identical hexagons.

The rule below can be used to find the number of hexagons in each pattern of this sequence.

Multiply the Pattern number by 5 and subtract 1

(b) Work out the number of hexagons in Pattern number 7
(1 mark)

(continued on the next page)

3. continued.

Remember:

Multiply the Pattern number by 5 and subtract 1

A pattern in this sequence has exactly **59** hexagons.

(c) Work out its Pattern number.

(2 marks)

(Total for Question 3 is 5 marks)

4. Megan buys 2 muffins and 1 carrot cake.
The total cost is £4.74

The cost of the carrot cake is £1.80

- (a) Find the cost of each muffin.
(3 marks)

£ _____

(continued on the next page)

Turn over

4. continued.

Caitlin buys some apples and some oranges.

She buys twice as many apples as oranges.

Each apple costs £0.25

Each orange costs £0.30

Caitlin has £5 to spend.

- (b) Find the greatest number of apples she can buy.
(3 marks)

(Total for Question 4 is 6 marks)

Turn over

- 5. Look at the table for Question 5 in the Diagram Book.**

It shows information about the number of gold medals won by each of 8 countries at the 2016 Olympics.

- (a) Work out the range of the number of gold medals.**

(1 mark)

(continued on the next page)

5. continued.

**(b) Work out the median number of gold medals.
(2 marks)**

**(c) Work out the mean number of gold medals.
(2 marks)**

(Total for Question 5 is 5 marks)

6. Sabbir arrived at Dhaka train station at 9 30 pm

(a) Write this time using the 24-hour clock.

(1 mark)

(continued on the next page)

6. continued.

A train left Dhaka train station at 10 30 pm one day.

**The train arrived at Chittagong train station at
7 50 am the next day.**

(b) Work out the time taken by this train.

Give your answer in hours and minutes.

(2 marks)

_____ hours _____ minutes

(continued on the next page)

6. continued.

A different train travelled from Dhaka to Darshana.

The train took 5 hours and 30 minutes.

The train travelled a distance of 327 kilometres.

(c) Work out the average speed of the train.

Give your answer in kilometres per hour correct to the nearest whole number.

(3 marks)

_____ km/h

(Total for Question 6 is 6 marks)

Turn over

7. (a) Write down the prime number between 90 and 100
(1 mark)

- (b) Find the value of 3^6
(1 mark)

- (c) Find the cube root of 6859
(1 mark)

(continued on the next page)

Turn over

7. continued.

(d) (i) Work out the value of

$$\frac{\sqrt{8 \cdot 4 + 9 \cdot 1^2}}{4 \cdot 1 \times 0 \cdot 6}$$

Write down all the figures on your calculator display.

(2 marks)

(continued on the next page)

7. (d) continued.

(ii) Write your answer to part (d) (i) correct to
1 decimal place.

(1 mark)

(Total for Question 7 is 6 marks)

8. (a) Simplify

$$2e - 3f + 4e - 7f$$

(2 marks)

(continued on the next page)

8. continued.

(b) Expand and simplify

$$5(4y + 3) - (3y - 1)$$

(2 marks)

(continued on the next page)

8. continued.

(c) Factorise fully

$$4p + 6pq$$

(2 marks)

(Total for Question 8 is 6 marks)

9.

$$h = 6q - 2u$$

- (a) Work out the value of h when $q = 3$ and $u = -5$
(2 marks)

$$h = \underline{\hspace{4cm}}$$

(continued on the next page)

9. continued.

$$B = 3m + 2p$$

- (b) Work out the value of p when $B = 2$ and
 $m = 5$
(2 marks)

$$p = \underline{\hspace{4cm}}$$

(Total for Question 9 is 4 marks)

10. All the teachers at a school are either left footed or right footed.

At the school

the number of left footed teachers : the number of right footed teachers = 3 : 13

A teacher at the school is picked at random.

- (a) Find the probability that this teacher is left footed.

(1 mark)

(continued on the next page)

10. continued.

At the school, there are 18 left footed teachers.

**(b) How many right footed teachers are there?
(2 marks)**

(Total for Question 10 is 3 marks)

11. Benson was on holiday in Kenya for 70 days.

He was in Nairobi for $\frac{2}{7}$ of this holiday.

He was in Mombasa for $\frac{1}{5}$ of this holiday.

He was in Kisumu for $\frac{4}{9}$ of the REST of this holiday.

For what fraction of this holiday was Benson in Kisumu?

(4 marks)

Answer space continues on the next page.

11. continued.

(Total for Question 11 is 4 marks)

Turn over

12. Look at the diagram for Question 12 in the Diagram Book.

On the grid, draw the graph of $y = 2x - 3$ for values of x from -1 to 4

(Total for Question 12 is 3 marks)

13. (a) Expand and simplify
 $(e + 3)(e - 5)$
(2 marks)

(continued on the next page)

13. continued.

(b) Solve

$$y = \frac{2y + 1}{5}$$

Show clear algebraic working.

(3 marks)

$$y = \underline{\hspace{4cm}}$$

(continued on the next page)

13. continued.

(c) Solve

$$x^2 + 3x - 18 = 0$$

Show your working clearly.

(3 marks)

(Total for Question 13 is 8 marks)

14. Look at the table for Question 14 in the Diagram Book.

It gives information about the price of gold.

- (a) Work out the percentage increase in the price of gold between 1st February 2016 and 1st March 2016**

Give your answer correct to 3 significant figures.

(3 marks)

_____ %

(continued on the next page)

Turn over

14. continued.

**The price of one ounce of gold on
1st February 2016 was 1126·50 dollars.**

**The price of gold increased by 19% from
1st February 2016 to 1st July 2016**

**(b) Work out the price of one ounce of gold on
1st July 2016**

Give your answer correct to the nearest dollar.

(3 marks)

_____ dollars

(Total for Question 14 is 6 marks)

Turn over

15. Look at the diagram and at the table for Question 15 in the Diagram Book.

The diagram shows a biased 5-sided spinner.

Kenny spins the spinner once.

The table in the Diagram Book gives the probabilities that the spinner lands on red or on blue or on green.

(a) Work out the probability that the spinner lands on red or blue.

(1 mark)

(continued on the next page)

15. continued.

When the spinner is spun once, the probability that the spinner lands on brown is 0.06 more than the probability that the spinner lands on yellow.

Jenine spins the spinner 150 times.

(b) Work out an estimate for the number of times the spinner lands on yellow.

(4 marks)

(Total for Question 15 is 5 marks)

Turn over

16. Look at the diagram for Question 16(a) and (b) in the Diagram Book.

It shows triangle A and triangle B on a coordinate grid.

A cut out shape is available if you wish to use it.

- (a) Describe fully the single transformation that maps triangle A onto triangle B**
(3 marks)

- (b) On the grid, translate triangle A by the vector**
 $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$

Label the new triangle C
(1 mark)

(continued on the next page)

16. continued.

(c) Look at the diagram for Question 16(c) in the Diagram Book.

It shows triangle D and triangle E on a coordinate grid.

Describe fully the single transformation that maps triangle D onto triangle E

Two cut out shapes are available if you wish to use them.

(2 marks)

(Total for Question 16 is 6 marks)

17. Look at diagram 1 and diagram 2 for Question 17 in the Diagram Book.

They are NOT accurate.

Diagram 1 shows an isosceles triangle **ABC** and a semicircle with centre **O** and diameter **12 cm**

The point **B** lies on the semicircle.

The line **OB** is the line of symmetry of the diagram.

AC is **1 cm** from the diameter of the semicircle and
AC = 8 cm

Diagram 2 shows the triangle **ABC**

Work out the area of the unshaded region in diagram 1.

Give your answer correct to **3** significant figures.

(4 marks)

Answer space continues on the next page.

17. continued.

_____ cm^2

(Total for Question 17 is 4 marks)

Turn over

18. Look at the table for Question 18 in the Diagram Book.

It shows the volumes, in km^3 , of four oceans.

- (a) Write 7.18×10^7 as an ordinary number.
(1 mark)

- (b) Calculate the total volume of these four oceans.
(2 marks)

_____ km^3

(continued on the next page)

18. continued.

The volume of the South China Sea is

9 880 000 km³

(c) Write 9 880 000 in standard form.

(1 mark)

(Total for Question 18 is 4 marks)

19. Look at the diagram for Question 19 in the Diagram Book.

It is NOT accurately drawn.

It shows triangle **ACD**

ABC is a straight line.

BD = 12.6 cm

DC = 19.3 cm

Angle **ADB** = 20°

Angle **ABD** is a right angle.

Work out the length of **AC**

Give your answer correct to 1 decimal place.

(5 marks)

Answer space continues on the next page.

19. continued.

_____ cm

(Total for Question 19 is 5 marks)

Turn over

20. Look at the diagram for Question 20 in the Diagram Book.

It is NOT accurately drawn.

AB is parallel to **ED**

ACD and **BCE** are straight lines.

$$AB = 8 \text{ cm}$$

$$AC = 4.8 \text{ cm}$$

$$BC = 6.4 \text{ cm}$$

$$ED = 20 \text{ cm}$$

Work out the length of **BE**

(3 marks)

Answer space continues on the next page.

20. continued.

_____ cm

(Total for Question 20 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER
