

**Paper Reference 4MA1/1F**

**Pearson Edexcel**

**International GCSE**

Total Marks

**Mathematics A**

**Paper 1F**

**Foundation Tier**

**(Calculator)**

**Thursday 7 January 2021 – Morning**

**Time: 2 hours plus your additional time allowance.**

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

<b>Surname</b>					
<b>Other names</b>					
<b>Centre Number</b>					
<b>Candidate Number</b>					

**Y66295A**

**YOU MUST HAVE**

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

**YOU WILL BE GIVEN**

**Diagram Book  
Formulae Pages**

**Turn over**

## **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.**

**Turn over**

**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.**

**You may be provided with a model for Question 19**

**You may be provided with a shape for Question 14**

**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.**

---

**6**

**Answer ALL TWENTY SIX  
questions.**

**Write your answers in the spaces  
provided.**

**You must write down all the  
stages in your working.**

**Turn over**

**1. Look at the table for Question 1 in the Diagram Book.**

**It shows the height, in metres, of each of six volcanoes.**

**(a) Which of these volcanoes has the greatest height?  
(1 mark)**



**(continued on the next page)**

**8**

**1. continued.**

**(b) Write down the value of the 8 in  
the number 4585**

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

1. continued.

(c) Write the number **6046** in words.

(1 mark)

---

(d) Write the number **5137** correct to the nearest hundred.

(1 mark)

---

(continued on the next page)

Turn over

1. continued.

(e) Work out the difference in the height of the Acamarachi volcano and the height of the Semeru volcano.

(1 mark)

\_\_\_\_\_ metres

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

---

**Turn over**

**2. Look at the diagrams for Question 2(a)(i) and 2(a)(ii) in the Diagram Book.**

**Sandeep is designing some 3-sided spinners.**

**He is going to spin each spinner once.**

**(continued on the next page)**

**2. continued.**

- (a) (i) Write a different number on each line so that when the spinner is spun it is IMPOSSIBLE that the spinner will land on a number greater than 9**
- There are three spaces to fill.**
- (1 mark)**

**(continued on the next page)**

2. (a) continued.

(ii) Write a different number  
on each line so that when  
the spinner is spun it is  
**CERTAIN** that the spinner  
will land on a multiple of **10**  
There are three spaces to fill.  
(1 mark)

(continued on the next page)

**2. continued.**

**Look at the diagram for Question 2(b)  
in the Diagram Book.**

**It shows a probability scale.**

**The likelihood of an outcome  
is EVENS.**

**(b) On the probability scale, mark  
the probability of this outcome.  
(1 mark)**

**(Total for Question 2 is 3 marks)**

---

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

**It shows a weighing scale.**

**Amir is going on holiday.**

**He weighs his suitcase on the weighing scales at the airport.**

**The reading on the scale gives the weight of Amir's suitcase.**

**An excess luggage charge has to be paid when the weight of a suitcase is greater than **25 kg****

**This charge is **7·45** euros for each kilogram over the **25 kg** limit.**

**(continued on the next page)**

**Turn over**

**3. continued.**

**Work out the excess luggage charge that Amir has to pay.**

**(3 marks)**

**Answer space continues on the next page.**

**3. continued.**

\_\_\_\_\_ euros

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

---

**Turn over**

4. (a) Write

$0.57$  as a fraction.

(1 mark)



(continued on the next page)

Turn over

4. continued.

(b) Write

**0·02** as a percentage.

(1 mark)

\_\_\_\_\_ %

(continued on the next page)

Turn over

4. continued.

(c) Write

$\frac{72}{84}$  as a fraction in its simplest form.

(1 mark)

---

(continued on the next page)

Turn over

4. continued.

(d) Write

$\frac{22}{5}$  as a mixed number.

(1 mark)

---

(continued on the next page)

Turn over

4. continued.

(e) Work out

$$\frac{1}{8} \text{ of } 624$$

(1 mark)

---

**(Total for Question 4 is 5 marks)**

---

**Turn over**

**5. Look at the diagram for Question 5 in the Diagram Book.**

**It shows a sequence of shapes made by shading squares on a square grid.**

**(a) On the grid in the Diagram Book, draw Shape number 4  
(1 mark)**

**(continued on the next page)**

5. continued.

(b) Complete the table below.

There are two spaces to fill.

(1 mark)

<b>Shape number</b>	<b>Number of shaded squares</b>
<b>1</b>	<b>5</b>
<b>2</b>	<b>9</b>
<b>3</b>	<b>13</b>
<b>4</b>	
<b>5</b>	

(continued on the next page)

Turn over

**5. continued.**

- (c) Find the number of shaded squares in Shape number 8  
(1 mark)**



**(continued on the next page)**

**Turn over**

**5. continued.**

**(d) Explain why no shape in the sequence is made by shading exactly 50 squares.**

**(1 mark)**

---

---

---

**(Total for Question 5 is 4 marks)**

---

**6. Nav makes bracelets using cord.**

**Nav has a 6 metre length of cord.**

**Each bracelet needs 17.5 cm**

**of cord.**

**Work out the greatest number of  
bracelets that Nav can make.**

**(3 marks)**

**Answer space continues on the next  
page.**

**6. continued.**

---

**(Total for Question 6 is 3 marks)**

---

**Turn over**

7. (a) Simplify

$$10w + 4y + 3w - 6y$$

(2 marks)



(continued on the next page)

Turn over

7. continued.

(b) Solve

$$2n + 5 = 16$$

(2 marks)

$n =$  \_\_\_\_\_

(Total for Question 7 is 4 marks)

---

Turn over

**8. Look at the two–way table for Question 8 in the Diagram Book. It shows some information about the 60 noodle meals eaten in a noodle bar by each of 60 people last Friday.**

**(a) Complete the two–way table.**

**There are six spaces to fill.**

**(3 marks)**

**(continued on the next page)**

**8. continued.**

**One of the 60 people is selected at random.**

**(b) Write down the probability that this person ate Fried Udon noodles.**

**(1 mark)**

---

**(Total for Question 8 is 4 marks)**

---

**Turn over**

9. Look at the diagram for Question 9 in the Diagram Book.

It shows quadrilateral **ABCD** and isosceles triangle **ADE**,  
where  **$AE = AD$**

**EDC** is a straight line.

Angle **BAD** =  $59^\circ$

Angle **ABC** =  $115^\circ$

Angle **BCD** =  $68^\circ$

Angle **AED** =  $x^\circ$

(continued on the next page)

9. continued.

**Work out the value of  $x$**

**Give a reason for each stage of your working.**

**(4 marks)**

**Answer space continues on the next two pages.**

**9. continued.**

**Turn over**

9. continued.

**X =** \_\_\_\_\_

**(Total for Question 9 is 4 marks)**

---

**10. In Koko's shop**

**5 chocolate bars cost \$5.75**

**2 chocolate bars and 3 packets of  
sweets cost \$7.85**

**Work out the cost of one packet of  
sweets.**

**(3 marks)**

**Answer space continues on the next  
page.**

10. continued.

\$ \_\_\_\_\_

**(Total for Question 10 is 3 marks)**

---

**Turn over**

11. Akiko travelled from London to Tokyo by plane.

The plane left London at **18 40** on Friday.

The plane arrived in Tokyo the next day, at **06 25** London time.

How long did the flight take?

Give your answer in hours and minutes.

(2 marks)

Answer space continues on the next page.

11. continued.

\_\_\_\_\_ hours

\_\_\_\_\_ minutes

**(Total for Question 11 is 2 marks)**

---

**Turn over**

12. (a) Expand  
 $x(4 - x)$   
(1 mark)
- 

(continued on the next page)

Turn over

12. continued.

Given that

$$t = pq - r$$

$$p = 1.5 \quad q = 2.4 \quad r = -5.6$$

(b) work out the value of **t**

(2 marks)

Answer space continues on the  
next page.

12. (b) continued.

**t =** \_\_\_\_\_

**(continued on the next page)**

**Turn over**

**12. continued.**

**(c) Make  $m$  the subject of**

$$**y = mx - n**$$

**(2 marks)**

---

**(Total for Question 12 is 5 marks)**

---

**Turn over**

**45**

- 13. (a) Express 180 as a percentage  
of 750  
(2 marks)**

\_\_\_\_\_ %

**(continued on the next page)**

**Turn over**

**13. continued.**

**Zaina has booked a singer for a show.**

**The singer will get 94% of the total money from the ticket sales.**

**The cost of each ticket for the show is 32.50 dirhams.**

**Zaina sells 180 tickets.**

**(b) Work out the amount of money the singer will get.**

**(3 marks)**

**Answer space continues on the next two pages.**

13. (b) continued.

13. (b) continued.

\_\_\_\_\_ dirhams

**(Total for Question 13 is 5 marks)**

---

**14. Look at the diagram for Question 14 in the Diagram Book.**

**It shows shape **A**, shape **B** and shape **C** on a grid.**

**A cut out shape may be available if you wish to use it.**

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

---

---

---

**(continued on the next page)**

**Turn over**

14. continued.

(b) Describe fully the single transformation that maps shape **B** onto shape **C**  
(3 marks)

---

---

---

---

---

---

**(Total for Question 14 is 5 marks)**

---

**15. Look at the table for Question 15 in the Diagram Book.**

**A bag contains 30 coloured counters.**

**The table gives the number of counters of each colour.**

**One of the counters is taken at random from the bag.**

**(a) Write down the probability that this counter is green.**

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**15. continued.**

**(b) Write down the probability that  
this counter is NOT red.**

**(2 marks)**

---

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

---

**Turn over**

16. Show that

$$\frac{5}{6} - \frac{3}{8} = \frac{11}{24}$$

(2 marks)

Answer space continues on the next page.

Turn over

16. continued.

**(Total for Question 16 is 2 marks)**

---

**Turn over**

**17. Pieter owns a currency conversion shop.**

**Last Monday, Pieter changed a total of 20 160 rand into a number of different currencies.**

**He changed  $\frac{3}{10}$  of the 20 160 rand into euros.**

**He changed the rest of the rands into dollars, rupees and francs in the ratios 9 : 5 : 2**

**(continued on the next page)**

**Turn over**

**17. continued.**

**Pieter changed more rands into dollars than he changed into francs.**

**Work out how many more.**

**(4 marks)**

**Answer space continues on the next two pages.**

17. continued.

17. continued.

\_\_\_\_\_ rand

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

---

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

**It gives information about the speeds, in kilometres per hour, of 80 motorbikes as each pass under a bridge.**

**(a) Write down the modal class.  
(1 mark)**



**(continued on the next page)**

**Turn over**

**18. continued.**

**(b) Work out an estimate for the mean speed of the motorbikes as they pass under the bridge.**

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

**(4 marks)**

**Answer space continues on the next page.**

18. (b) continued.

\_\_\_\_\_ kilometres  
per hour

**(Total for Question 18 is 5 marks)**

---

**Turn over**

**19. Look at Diagram 1 and Diagram 2 for Question 19 in the Diagram Book.**

**You may be provided with a model.**

**They are NOT accurate.**

**Diagram 1 and the model show a container for water in the shape of a prism.**

**Diagram 2 shows the front view of the prism.**

**The dimensions of the container are shown on the model and the diagrams.**

**All the corners of the prism are right angles.**

**(continued on the next page)**

**19. continued.**

**The rectangular base of the prism, shown shaded in Diagram 1, is horizontal and has width 85 cm and length 125 cm**

**The container is completely full of water.**

**Tuah is going to use a pump to empty the water from the container so that the volume of water in the container decreases at a constant rate.**

**(continued on the next page)**

**19. continued.**

**The pump starts to empty water from the container at 10 30 and at 12 00 the water level in the container has dropped by 20 cm**

**Find the time at which all the water has been pumped out of the container.**

**(4 marks)**

**Answer space continues on the next two pages.**

19. continued.

Turn over

19. continued.

---

**(Total for Question 19 is 4 marks)**

---

20.  $\mathcal{E} =$

$$\{20, 21, 22, 23, 24, 25, 26, 27, 28, 29\}$$

$$A = \{\text{odd numbers}\}$$

$$B = \{\text{multiples of 3}\}$$

List the members of the set

(i)  $A \cap B$

(1 mark)

Answer space continues on the  
next page.

Turn over

20. (i) continued.



**(continued on the next page)**

**Turn over**

20. continued.

Remember:

$$\mathcal{E} =$$

**{20, 21, 22, 23, 24, 25, 26, 27, 28, 29}**

$$A = \{\text{odd numbers}\}$$

$$B = \{\text{multiples of 3}\}$$

List the members of the set

(ii)  $A \cup B$

(1 mark)

Answer space continues on the  
next page.

Turn over

**20. (ii) continued.**

---

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

---

**Turn over**

21. (a) Factorise fully  
 $15y^4 + 20uy^3$   
(2 marks)



(continued on the next page)

**21. continued.**

**(b) Solve**

$$4 - 3x = \frac{5 - 8x}{4}$$

**Show clear algebraic working.**

**(3 marks)**

**Answer space continues on the next page.**

**Turn over**

21. (b) continued.

$$x = \underline{\hspace{10cm}}$$

**(Total for Question 21 is 5 marks)**

---

**Turn over**

**22. (a) Write**

**2 840 000 000 in standard form.**

**(1 mark)**



**(continued on the next page)**

**Turn over**

**22. continued.**

**(b) Write**

**$2.5 \times 10^{-4}$  as an ordinary  
number.**

**(1 mark)**

---

**(Total for Question 22 is 2 marks)**

---

**Turn over**

**23. Chen invests 40 000 yuan in a fixed-term bond for 3 years.**

**The fixed-term bond pays compound interest at a rate of 3.5% each year.**

**(a) Work out the value of Chen's investment at the end of 3 years. Give your answer to the nearest yuan.**

**(3 marks)**

**Answer space continues on the next page.**

**Turn over**

**23. (a) continued.**

\_\_\_\_\_ yuan

**(continued on the next page)**

**Turn over**

**23. continued.**

**Wang invested  $P$  yuan.**

**The value of his investment  
decreased by  $6.5\%$  each year.**

**At the end of the first year, the  
value of Wang's investment was  
 $30481$  yuan.**

**(b) Work out the value of  $P$   
(3 marks)**

**Answer space continues on the  
next page.**

23. (b) continued.

**P =** \_\_\_\_\_

**(Total for Question 23 is 6 marks)**

---

**Turn over**

**24. Look at the diagram for Question 24 in the Diagram Book.**

**It is NOT accurately drawn.**

**The diagram shows a curved path.**

**The boundary of the path is formed by two semicircles, with the same centre **O**, and two straight lines.**

**The inner semicircle has a radius of 7 metres.**

**The path has a width of 2 metres.**

**(continued on the next page)**

**24. continued.**

**Work out the perimeter of the path.**

**Give your answer correct to  
one decimal place.**

**(3 marks)**

**Answer space continues on the next  
two pages.**

24. continued.

Turn over

**24. continued.**

\_\_\_\_\_ metres

**(Total for Question 24 is 3 marks)**

---

**Turn over**

25. (a) Simplify

$$(2x^3y^5)^4$$

(2 marks)

---

(continued on the next page)

Turn over

**25. continued.**

**(b) (i) Factorise**

$$y^2 + 5y - 36$$

**(2 marks)**

---

**(continued on the next page)**

**Turn over**

25. (b) continued.

(ii) Hence, solve

$$y^2 + 5y - 36 = 0$$

(1 mark)

---

**(Total for Question 25 is 5 marks)**

---

**Turn over**

26. Look at the diagram for Question 26 in the Diagram Book.

It is NOT accurately drawn.

It shows an isosceles triangle **ABC**

$$BA = BC$$

**D** is the midpoint of **AC**

$$DB = 16 \text{ cm}$$

Angle **ADB** is a right angle.

$$\text{Angle } DAB = 65^\circ$$

Work out the perimeter of triangle **ABC**

Give your answer correct to one decimal place.

(4 marks)

Answer space is on the next two pages.

Turn over

**26. continued.**

**Turn over**

26. continued.

\_\_\_\_\_ cm

**(Total for Question 26 is 4 marks)**

---

**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

---