Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International GCSE

Thursday 16 May 2024

Morning (Time: 2 hours)

Paper reference **4MA1/1F**

Mathematics A

PAPER 1F
Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
  Anything you write on the formulae page 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.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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F:1/1/1/1/1/1/1/

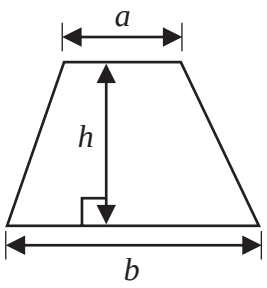
P 7 3 9 8 9 A 0 1 2 8

Pearson

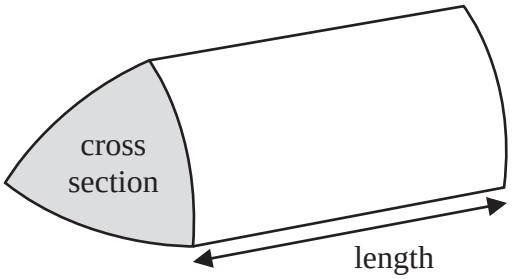
International GCSE Mathematics

Formulae sheet – Foundation Tier

Area of trapezium = $\frac{1}{2}(a + b)h$

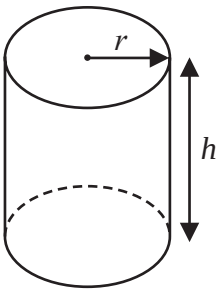


Volume of prism = area of cross section × length



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi rh$



Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The table gives information about the lengths, in kilometres, of the shorelines of seven lakes.

Lake	Length of shoreline (km)
Nasser	8947
Kentucky	3808
Saimaa	13 600
Volta	4763
Huron	6124
Inari	2758
Superior	4361

(a) Which of these seven lakes has the longest shoreline?

.....

(1)

(b) Write the number 6124 in words.

.....

(1)

The shoreline of Lake Nasser is longer than the shoreline of Lake Inari.

(c) How much longer?

..... km

(1)

(d) Write down the value of the 6 in the number 4763

.....

(1)

Two numbers in the table round to 4000 when written correct to the nearest thousand.

(e) Write down these two numbers.

..... and .....

(1)

(Total for Question 1 is 5 marks)

2 (a) Simplify $10p - 4p + 9p$

.....

(1)

(b) Simplify $9 \times 4q$

.....

(1)

(c) Solve $4r = 15$

$r =$ .....

(1)

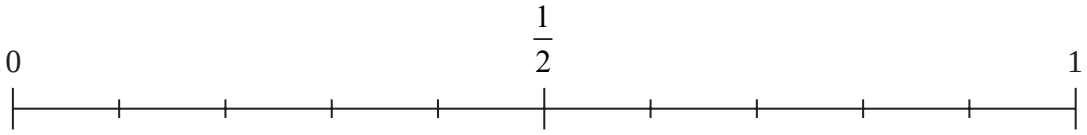
(Total for Question 2 is 3 marks)

3 A box contains 10 balls.

5 balls are black
3 balls are green
2 balls are red

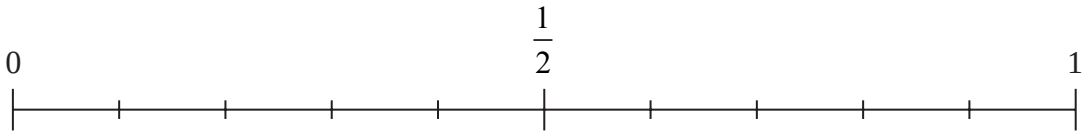
Rema is going to take at random a ball from the box.

(a) On the probability scale, mark with a cross (×) the probability that the ball is black.



(1)

(b) On the probability scale, mark with a cross (×) the probability that the ball is orange.



(1)

Johan has three bags of counters, **A**, **B** and **C**
He tries to find the probability of taking at random a white counter from each bag.
He writes his probabilities in a table.

Bag	**A**	**B**	**C**
Probability	0.7	0.45	1.2

The probability that Johan writes for bag **C** is incorrect.

(c) Explain how you know that it is incorrect.

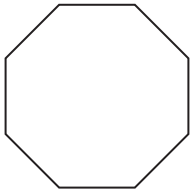
.....

.....

(1)

(Total for Question 3 is 3 marks)

4 Here is a polygon.

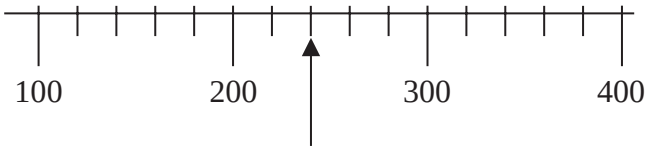


(a) Write down the mathematical name of this polygon.

.....

(1)

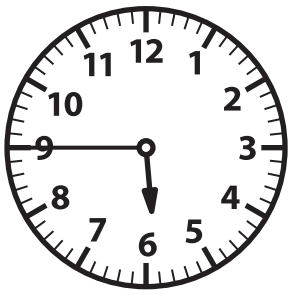
(b) Write down the number marked with the arrow.



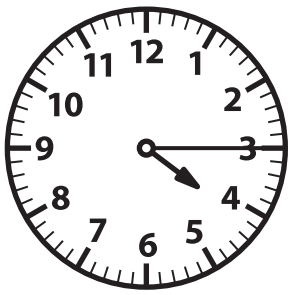
.....

(1)

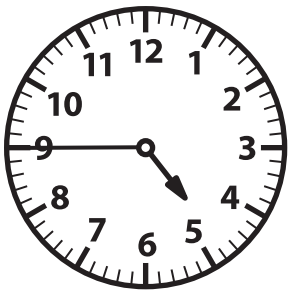
Here are four clock faces.



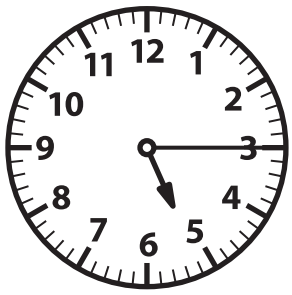
A



B



C



D

(c) Write down the letter of the clock face that shows quarter to five.

.....

(1)

(d) Complete the following sentence by writing a suitable metric unit on the dotted line.

The height of the Eiffel Tower is 300 .....

(1)

(Total for Question 4 is 4 marks)

5 Here is a list of numbers.

2 8 9 18 24 28

(a) From the numbers in the list, write down

(i) an odd number

.....

(1)

(ii) a number that is a multiple of both 4 and 6

.....

(1)

(iii) a cube number

.....

(1)

(iv) a prime number

.....

(1)

(b) Work out the value of

$6^2 + 2^3 \times 5$

.....

(1)

(Total for Question 5 is 5 marks)

6

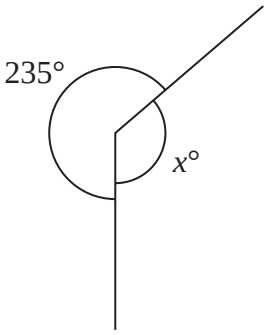


Diagram **NOT** accurately drawn

(a) (i) Work out the value of x

$x =$ .....

(1)

(ii) Give a reason for your answer.

.....

(1)

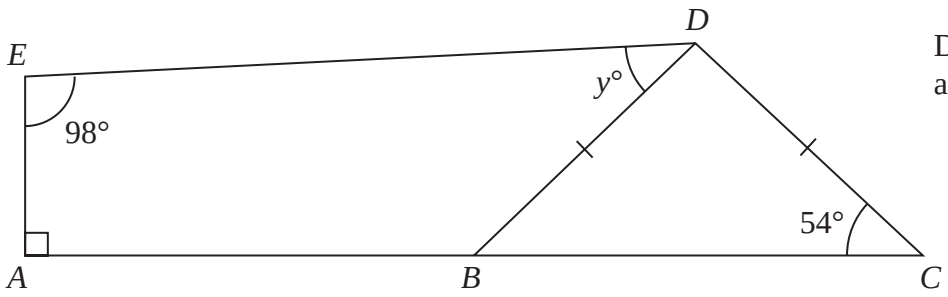


Diagram **NOT** accurately drawn

ABDE is a quadrilateral.
BCD is an isosceles triangle.
ABC is a straight line.

(b) Work out the value of y

$y =$ .....

(3)

(Total for Question 6 is 5 marks)

7 Harold works in a factory.

His normal hourly rate of pay is £14
His overtime hourly rate of pay is £21

Harold is paid the normal hourly rate of pay for 35 hours in one week.
His total pay for this week is £679

Work out the number of hours of overtime he works in this week.

.....

(Total for Question 7 is 4 marks)

8 (a) Simplify $10x - 7y - 6x + 4y$

.....

(2)

$T = 4d - 6e$

(b) Work out the value of T when $d = 13$ and $e = 7$

$T =$ .....

(2)

(c) Solve $5p + 11 = 28$

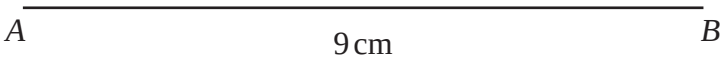
$p =$ .....

(2)

(Total for Question 8 is 6 marks)

9 *ABC* is an equilateral triangle with sides of length 9 cm.

Use a ruler and compasses only to **construct** the triangle *ABC*
The side *AB* has been drawn for you.
You must show all your construction lines.



(Total for Question 9 is 2 marks)

10 There are 29 cars in a car park.

10 of the cars are red.
The rest of the cars are white or blue.

Sasha selects at random one of these cars.

(a) Write down the probability that she selects a red car.

.....

(1)

The probability that Sasha selects a white car is $\frac{7}{29}$

(b) Work out the probability that she selects a blue car.

.....

(2)

(Total for Question 10 is 3 marks)

11 David is going to make some biscuits.

Here is a list of ingredients for making 24 biscuits.

Ingredients for 24 biscuits
120 g butter
60 g sugar
200 g flour

David has

five 250 g packs of butter

750 g of sugar

1.4 kg of flour

Work out the maximum number of biscuits that David can make.
Show your working clearly.

.....

(Total for Question 11 is 4 marks)

12 The table shows information about the number of school lunches each of 30 students had in one week.

Number of school lunches	Frequency
0	2
1	5
2	11
3	7
4	4
5	1

(a) Work out the mean number of school lunches.

.....

(3)

The probability that Alex takes a packed lunch to school is 0.79

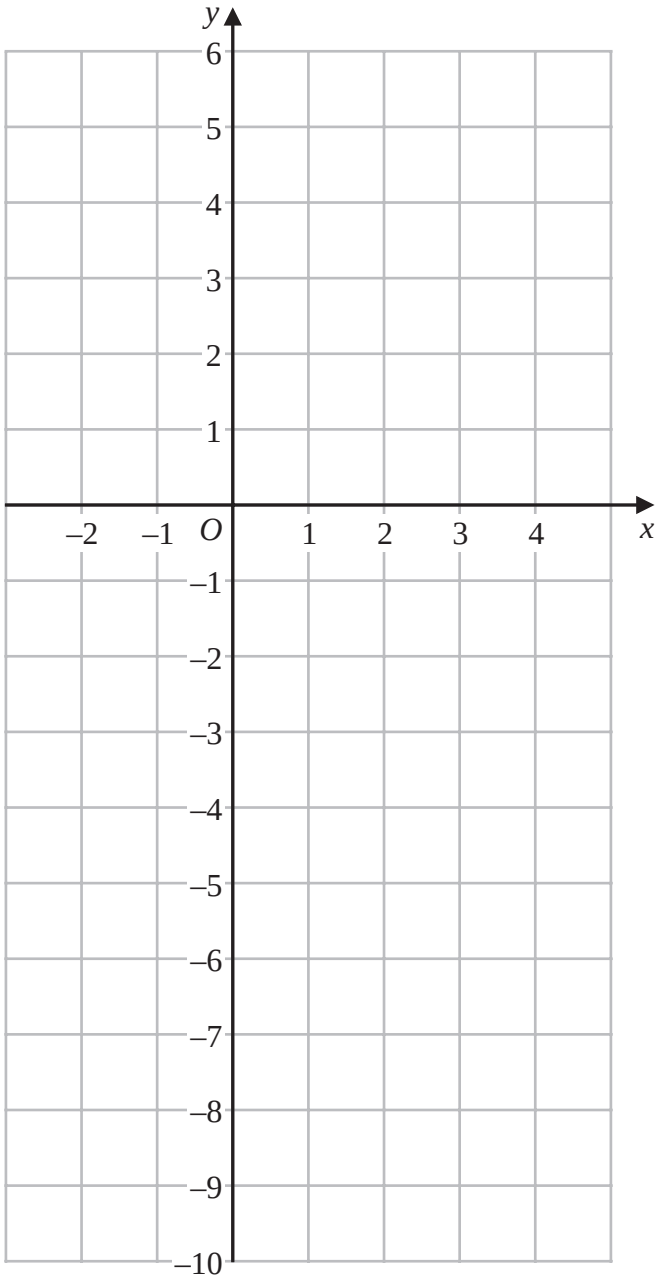
(b) Work out the probability that Alex does **not** take a packed lunch to school.

.....

(1)

(Total for Question 12 is 4 marks)

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



(Total for Question 13 is 3 marks)

14 Chaviv makes 490 loaves of bread each week for his shop.

86 of the loaves are sourdough.

(a) Write 86 as a percentage of 490
Give your answer correct to one decimal place.

..... %

(2)

A loaf of sourdough bread weighs 375 grams before it is baked.

The loaf loses 12% of its weight when it is baked.

(b) Work out the weight of the loaf after it is baked.

..... grams

(3)

(Total for Question 14 is 5 marks)

15 The diagram shows a shape *ABCDE* made from a right-angled triangle *ABE* and a square *BCDE*

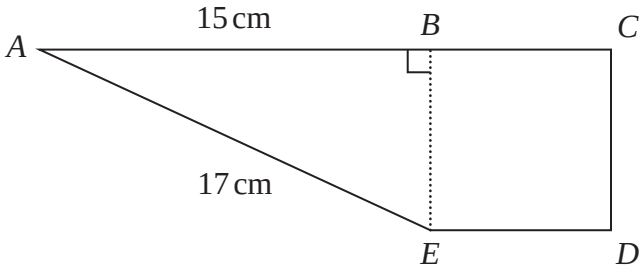


Diagram **NOT** accurately drawn

ABC is a straight line.

AB = 15 cm *AE* = 17 cm

The perimeter of triangle *ABE* is 40 cm

Work out the area of the shape *ABCDE*

..... cm^2

(Total for Question 15 is 4 marks)

16 Here are the first four terms of an arithmetic sequence.

1 4 7 10

(a) Find an expression, in terms of n, for the nth term of this sequence.

.....

(2)

The nth term of a different arithmetic sequence is $5n + 17$

(b) Find the 12th term of this sequence.

.....

(1)

(Total for Question 16 is 3 marks)

17 450 students were asked how they travelled to school on Monday.
Each student walked or travelled by bus or travelled by car or travelled by bicycle.
Each student used just one method of travel.

One of these students is chosen at random.
The table shows information about the probability of each method of travel.

Method of travel	walk	bus	car	bicycle
Probability	0.20	x	$2x$	0.26

Work out how many of the 450 students travelled by car.

.....

(Total for Question 17 is 4 marks)

18 Find the highest common factor (HCF) of 72 and 108
Show your working clearly.

.....

(Total for Question 18 is 2 marks)

19 Ava records the number of kilometres she drives each month.

In April, Ava drove 943 kilometres.
This is 15% more than the number of kilometres she drove in March.

Work out the number of kilometres Ava drove in March.

..... kilometres

(Total for Question 19 is 3 marks)

20 In the diagram, *ABCDE* is a regular pentagon.

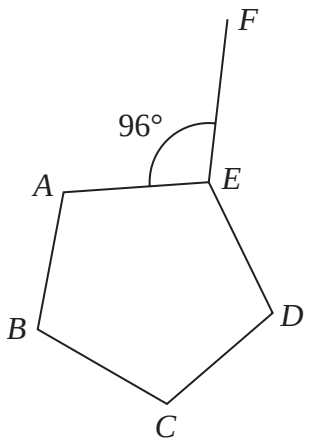


Diagram **NOT** accurately drawn

Angle *AEF* = 96°

Work out the size of the obtuse angle *FED*
Show your working clearly.

.....°

(Total for Question 20 is 4 marks)

21 (a) Expand and simplify $(m + 5)(m - 8)$

.....

(2)

(b) Solve $3n - 4 = \dfrac{5n + 6}{3}$

Show clear algebraic working.

$n =$ .....

(3)

(Total for Question 21 is 5 marks)

22 $\mathscr{E}$ = {23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34}
A = {even numbers}
B = {23, 29, 31}
C = {multiples of 3}

(a) List the members of the set

(i) $B \cup C$

.....

(1)

(ii) $A' \cap C$

.....

(1)

(b) Is it true that $B \cap C = \varnothing$?

Tick (✓) one of the boxes below.

Yes	No
☐	☐

Give a reason for your answer.

.....

.....

(1)

The set D has 4 members and is such that $D \cap (A \cup C) = \varnothing$

(c) List the members of set D

.....

(2)

(Total for Question 22 is 5 marks)

23 A cylinder is placed on a table.

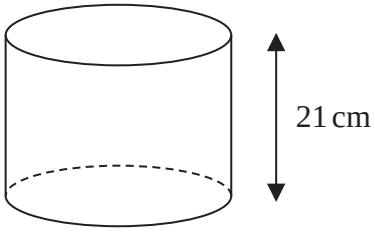


Diagram **NOT** accurately drawn

The volume of the cylinder is $1575\,cm^3$
The force exerted by the cylinder on the table is 84 newtons.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Work out the pressure on the table due to the cylinder.

..... newtons/cm^2

(Total for Question 23 is 3 marks)

24 The table gives the amount of rice produced by each of two countries in 2020

Country	Amount of rice (tonnes)
Indonesia	3.5×10^7
Argentina	8.2×10^5

(a) Write 3.5×10^7 as an ordinary number.

.....

(1)

In 2020, Japan produced 6 780 000 more tonnes of rice than Argentina.

(b) Work out the amount of rice Japan produced in 2020
Give your answer in standard form.

..... tonnes

(2)

(Total for Question 24 is 3 marks)

25 (a) Simplify $(2p)^0$ where $p > 0$

.....

(1)

$y^9 \times y^{-3} = y^n$

(b) Find the value of n

$n =$ .....

(1)

(c) Simplify fully $(5a^4c^2)^3$

.....

(2)

(Total for Question 25 is 4 marks)

26 The diagram shows a roof support.

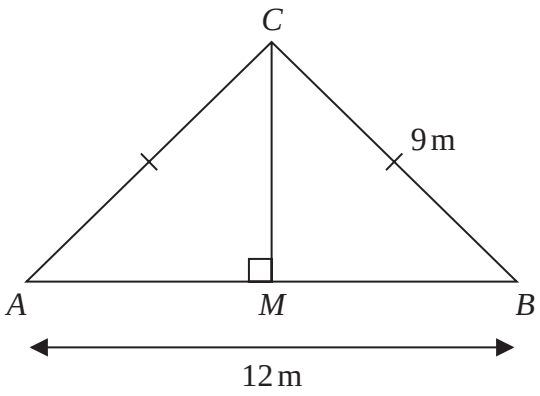


Diagram **NOT** accurately drawn

The roof support is made from four lengths of wood, *AB*, *AC*, *BC* and *MC*

AC = *BC* = 9 m *AB* = 12 m

angle *AMC* = 90°

Lewis is going to buy lengths of wood to make the roof support.

The wood costs 21.50 euros per metre.
Each length of wood he buys has to be a whole number of metres.

Work out the total cost of the wood Lewis needs to buy.
Show your working clearly.

..... euros

(Total for Question 26 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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