Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Friday 19 May 2023

Morning (Time: 1 hour 30 minutes)

Paper reference **1MA1/1F**

Mathematics

PAPER 1 (Non-Calculator)
Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, Formulae Sheet (enclosed). 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.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may not be used**.

Information

- The total mark for this paper is 80
- 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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P 7 5 1 4 7 A 0 1 2 4

Pearson

Answer ALL questions.

Write your answers in the spaces provided.

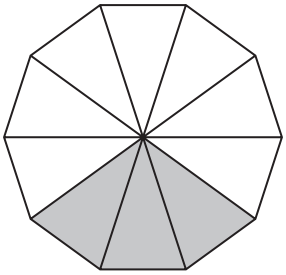
You must write down all the stages in your working.

1 Write 38% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 What fraction of this shape is shaded?



.....

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

1.6 1.4 2.1 0.5 1.3

From the list, write down the smallest number.

.....

(Total for Question 3 is 1 mark)

4 Work out $-9 + 5$

.....

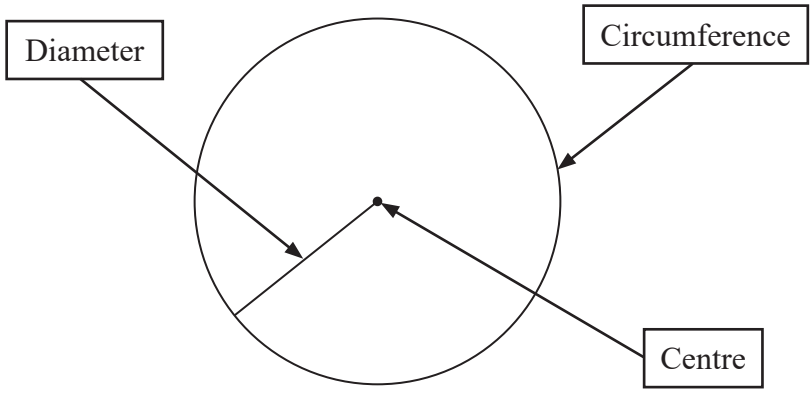
(Total for Question 4 is 1 mark)

5 Solve $p - 2 = 3$

$p =$ .....

(Total for Question 5 is 1 mark)

6 Freddie adds labels to this diagram of a circle.



Explain why one of the labels is wrong.

.....

.....

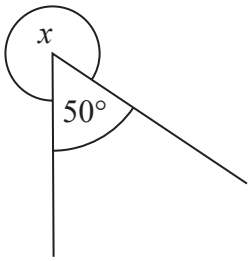
(Total for Question 6 is 1 mark)

7 Write down **three** different factors of 20

..... , ... , ...

(Total for Question 7 is 2 marks)

8



(a) Work out the size of the angle marked x.

.....°

(2)

A student says that an angle of 50° is an obtuse angle.

The student is wrong.

(b) Explain why.

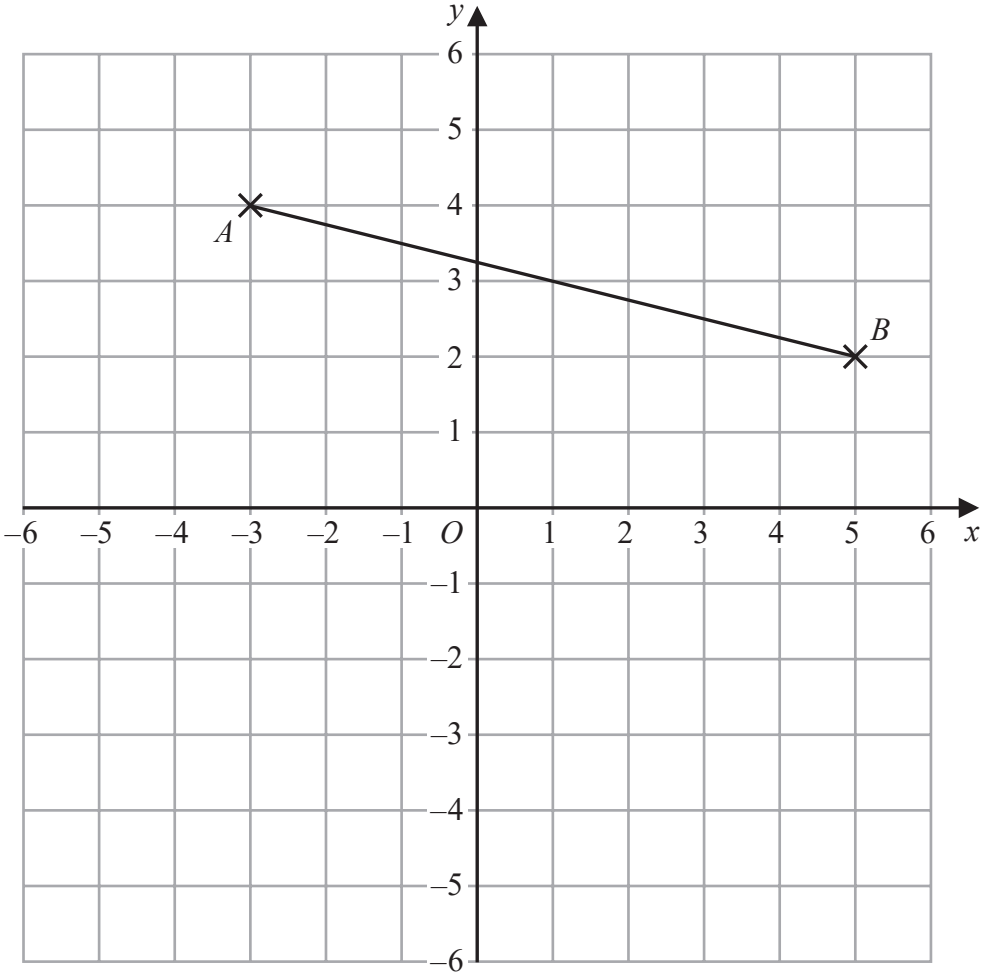
.....

.....

(1)

(Total for Question 8 is 3 marks)

9



(a) Write down the coordinates of point B.

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

(1)

(b) Plot the point with coordinates (4, –2)
Label this point C.

(1)

(c) Write down the coordinates of the midpoint of AB.

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

(1)

(d) Draw the line with equation $y = -4$

(1)

(Total for Question 9 is 4 marks)

10 Max sees this special offer in a shop.

> Buy one large plate and get one small plate for half the normal price.

The normal price of a large plate is £2
The normal price of a small plate is 80p

Max wants to buy 6 large plates and 6 small plates using this offer.
He has £15

Has Max got enough money?
You must show how you get your answer.

(Total for Question 10 is 4 marks)

11 A total of 700 tickets were on sale for a football match.

452 of the tickets were sold.

(a) How many tickets were **not** sold?

.....

(2)

For a different football match,

297 tickets were sold for £9.50 each.
399 tickets were sold for £19.50 each.

(b) Work out an estimate for the total amount of money paid for these tickets.
You must show all your working.

£.....

(3)

(c) Is your answer to part (b) an underestimate or an overestimate?
Give a reason for your answer.

.....

.....

.....

(1)

(Total for Question 11 is 6 marks)

12 Here are 6 numbers.

13 5 4 9 3 8

Work out the mean.

.....

(Total for Question 12 is 2 marks)

13 (a) Simplify $\frac{15a}{3}$

.....

(1)

(b) Simplify $19 + 5b + 4c - 7b + c$

.....

(2)

(c) Factorise $8d - 6$

.....

(1)

(Total for Question 13 is 4 marks)

14 Last week, 73% of the tickets sold at a cinema were adult tickets.

(a) What percentage of the tickets sold were **not** adult tickets?

.....%

(1)

Some people watched a film at the cinema.

number of adults : number of children = 2 : 5

(b) What fraction of these people were adults?

.....

(1)

On Friday,

500 people watched a film at the cinema.
70% of these people were children.

On Saturday,

720 people watched the film at the cinema.

$\frac{5}{8}$ of these people were children.

Kasim thinks more children watched the film on Friday than on Saturday.

(c) Is Kasim correct?
You must show how you get your answer.

(3)

(Total for Question 14 is 5 marks)

15 Work out $\frac{6}{7} \times \frac{5}{12}$

Give your answer as a fraction in its simplest form.

.....

(Total for Question 15 is 2 marks)

16 Here is the list of ingredients for making 20 biscuits.

Ingredients for 20 biscuits
150 g butter 100 g sugar 250 g flour

Harry wants to make 60 biscuits.

How much flour does Harry need?

..... g

(Total for Question 16 is 2 marks)

17 There are 200 counters in a bag.

38 counters are red.
52 counters are blue.

The rest of the counters are yellow or green.
There are the same number of yellow counters as green counters.

What percentage of the counters in the bag are yellow?

.....%

(Total for Question 17 is 4 marks)

18 Naomi has b bags of apples and c crates of apples.

There are 5 apples in each bag.
There are 28 apples in each crate.

Naomi has a total of T apples.

Write a formula for T in terms of b and c.

.....

(Total for Question 18 is 3 marks)

19 Here are the first five terms of an arithmetic sequence.

–5 3 11 19 27

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

.....

(Total for Question 19 is 2 marks)

20 Work out $8.46 \div 0.15$

.....

(Total for Question 20 is 3 marks)

21 Work out $7\frac{3}{8} - 2\frac{1}{2}$

Give your answer as a mixed number.

.....

(Total for Question 21 is 3 marks)

22 A cube has a total surface area of $150\,cm^2$

Work out the volume of the cube.

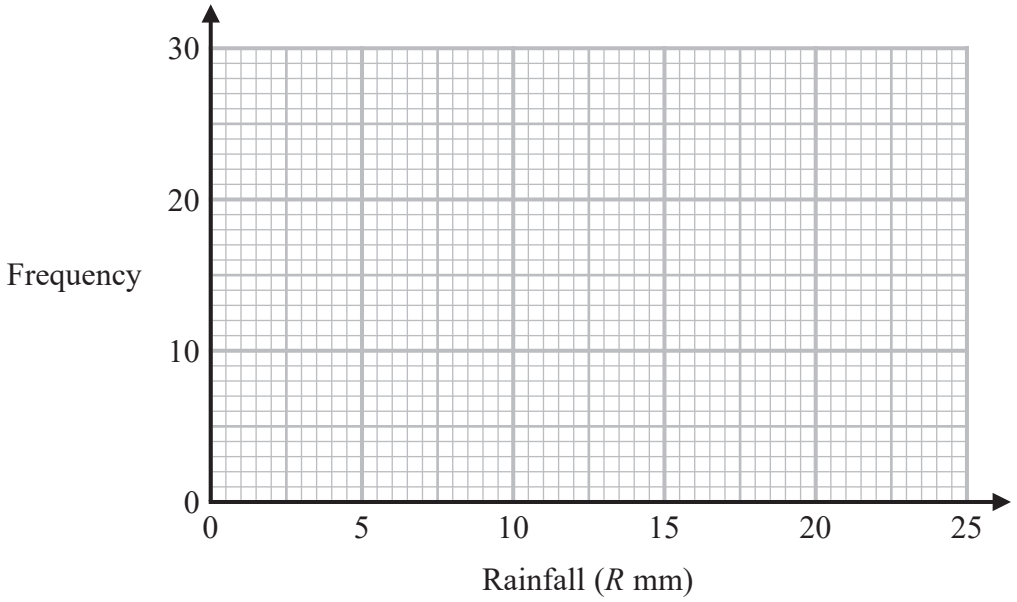
..... cm^3

(Total for Question 22 is 4 marks)

23 The table shows information about the daily rainfall in a town for 60 days.

Rainfall (R mm)	Frequency
$0 \leqslant R < 5$	8
$5 \leqslant R < 10$	24
$10 \leqslant R < 15$	13
$15 \leqslant R < 20$	11
$20 \leqslant R < 25$	4

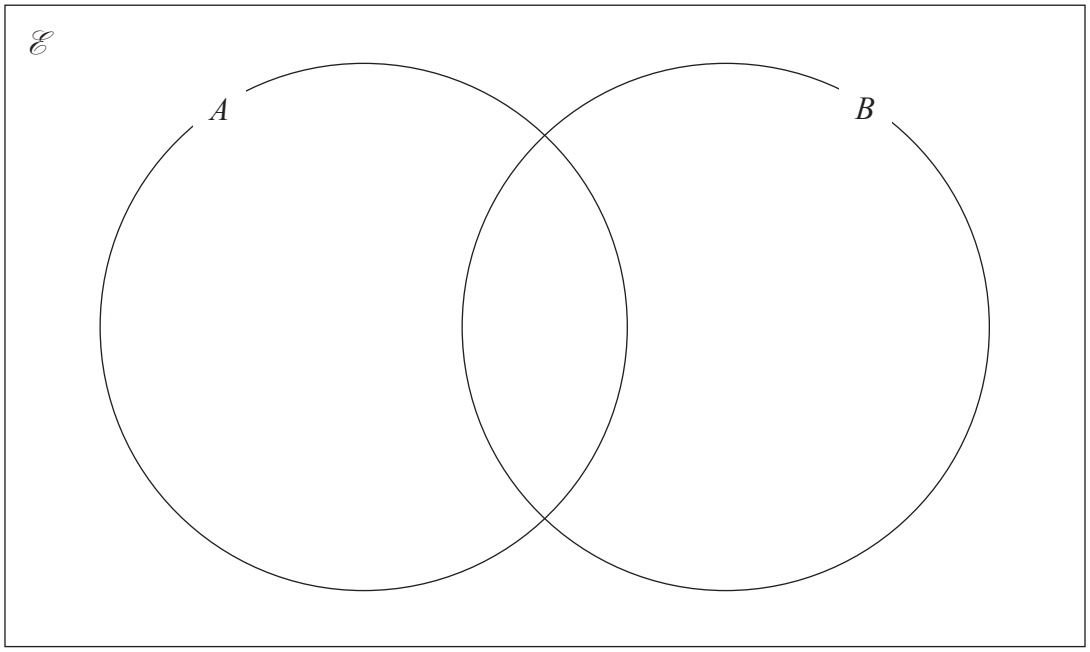
Draw a frequency polygon for this information.



(Total for Question 23 is 2 marks)

24 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{\text{odd numbers}\}$
$B = \{\text{square numbers}\}$

(a) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set $\mathscr{E}$

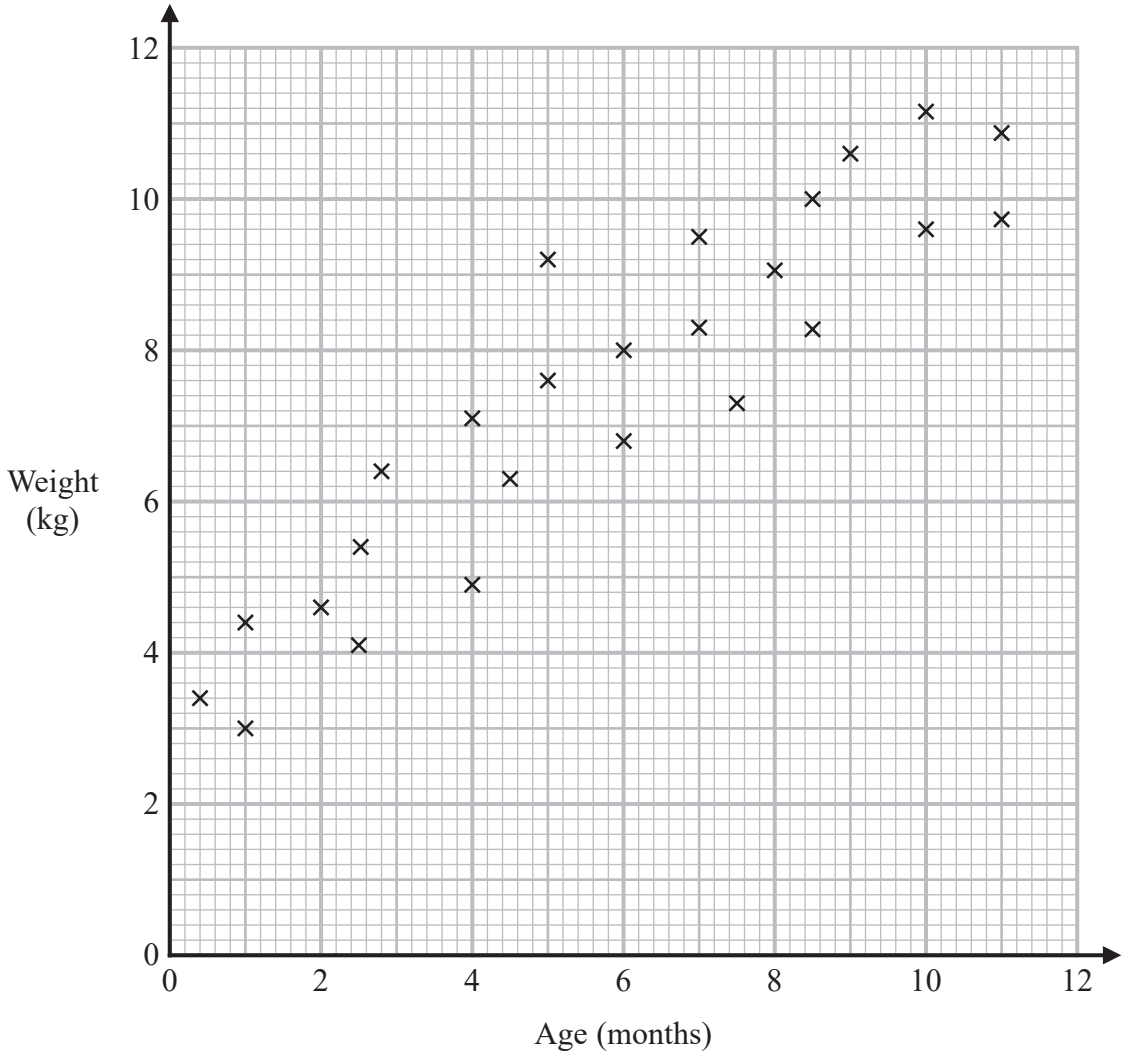
(b) Find the probability that this number is in the set B'

.....

(2)

(Total for Question 24 is 5 marks)

25 The scatter graph shows information about the ages and weights of some babies.



(a) Describe the relationship between the age and the weight of the babies.

.....

.....

.....

(1)

Another baby has a weight of 5.8 kg

(b) Using the scatter graph, find an estimate for the age of this baby.

..... months

(2)

(Total for Question 25 is 3 marks)

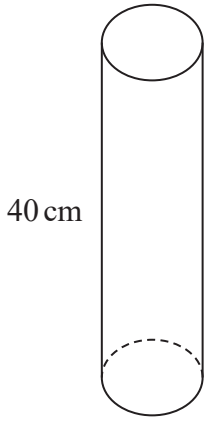
26 The price of a holiday increases by 20%
This 20% increase adds £240 to the price of the holiday.

Work out the price of the holiday before the increase.

£.....

(Total for Question 26 is 2 marks)

27 The diagram shows a solid cylinder on a horizontal floor.



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

The cylinder has a

volume of 1200 cm^3
height of 40 cm.

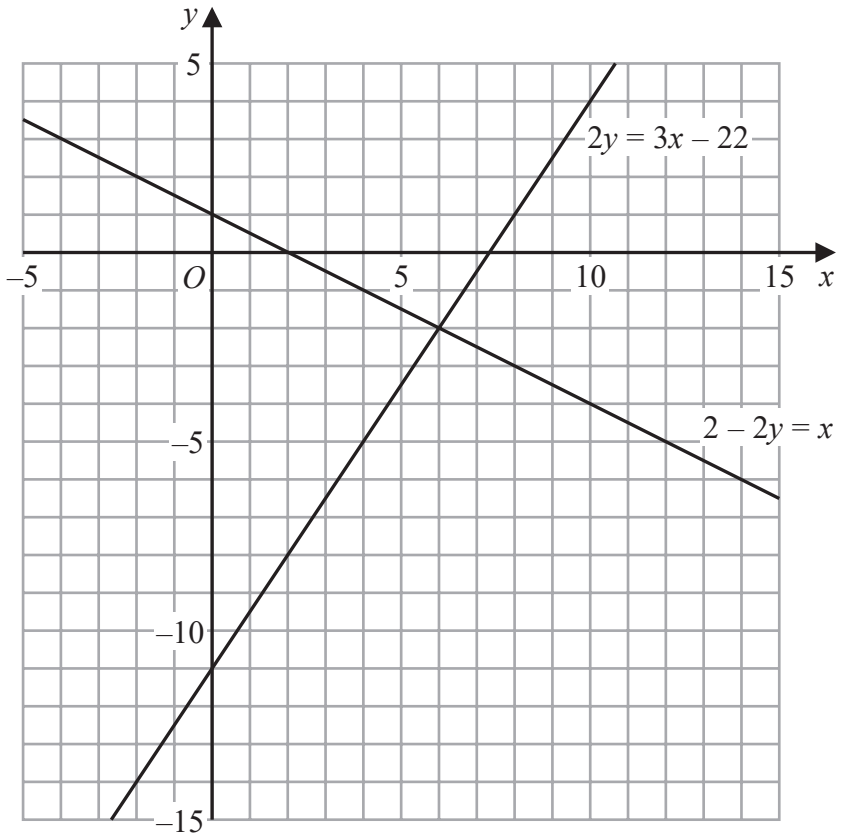
The cylinder exerts a force of 90 newtons on the floor.

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

..... newtons/cm^2

(Total for Question 27 is 3 marks)

28



Use these graphs to solve the simultaneous equations

$$2 - 2y = x$$
$$2y = 3x - 22$$

$x =$ .....

$y =$ .....

(Total for Question 28 is 1 mark)

29 Work out the value of $\dfrac{4^{-6} \times 4^{9}}{4}$

.....

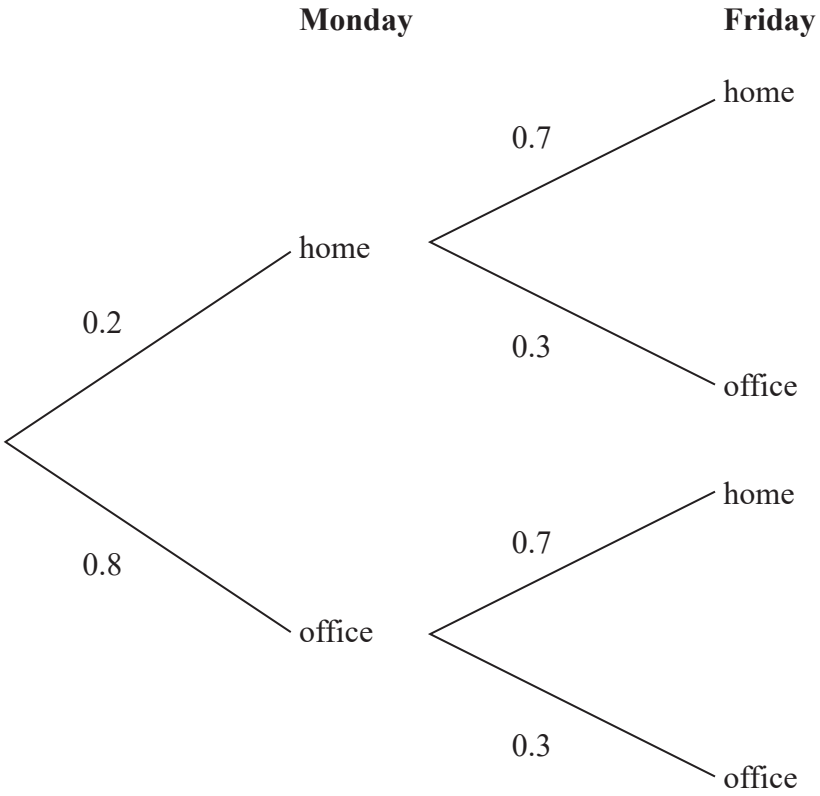
(Total for Question 29 is 2 marks)

30 Write down the exact value of $\cos 60°$

.....

(Total for Question 30 is 1 mark)

31 The probability tree diagram shows the probabilities that Shayla will work at home or will work at the office on two days next week.



Work out the probability that Shayla will work at home on Monday and work at the office on Friday.

.....

(Total for Question 31 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

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Pearson Edexcel GCSE (9–1) Mathematics

Friday 19 May 2023 – Morning

Syllabus reference **1MA1/1F**

Mathematics

PAPER 1 (Non-calculator)
Foundation Tier

Formulae Sheet
Do not return this Sheet with the question paper.

Turn over ▶

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Foundation Tier Formulae Sheet

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

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

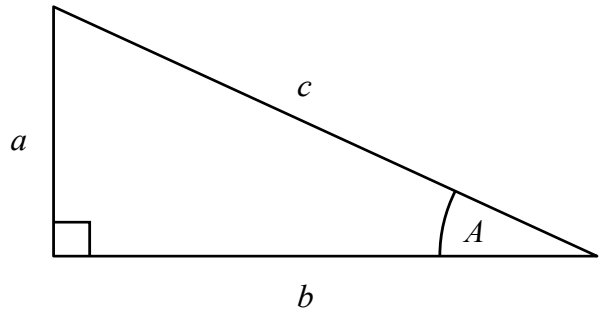
Volume of a prism = area of cross section × length

Where r is the radius and d is the diameter:

Circumference of a circle = $2\pi r = \pi d$

Area of a circle = πr^2

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

$a^2 + b^2 = c^2$

In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:

$\sin A = \frac{a}{c}$ $\cos A = \frac{b}{c}$ $\tan A = \frac{a}{b}$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

Total accrued = $P\left(1 + \frac{r}{100}\right)^n$

Probability

Where P (A) is the probability of outcome A and P (B) is the probability of outcome B:

P (A or B) = P (A) + P (B) – P (A and B)

END OF EXAM AID