

Write your name and the date clearly.

Name

Date

Teach Me Maths

GCSE (9–1) Mathematics

For Pearson Edexcel GCSE Mathematics (1MA1)

Mock Set B

Time: 1 hour 30 minutes

Mathematics

PAPER 3 (Calculator)

Foundation Tier

You must have: a ruler marked in centimetres and millimetres, a protractor, a pair of compasses, a pen, an HB or B pencil, an eraser, a calculator and the Formulae Sheet (last page). You may use tracing paper.

Total Marks

out of 80

Instructions

- Use **black** ink or a ball-point pen.
- If you use a pencil for diagrams, sketches or graphs, it must be dark (HB or B).
- **Write your name and the date** in the box at the top of this page.
- Answer **all** questions.
- Write your answers in the spaces provided – you may not need all the space.
- You must **show all your working**.
- Diagrams are **NOT** drawn accurately, unless the question says they are.
- You may use a calculator.
- If your calculator does not have a π button, use 3.142 for π unless the question says otherwise.

Information

- This paper is out of 80 marks.
- The marks for **each** question are shown in brackets – use them to judge how long to spend on each question.

Advice

- Read each question carefully before you start your answer.
- Try to answer every question.
- If you have time at the end, check your answers.

Practice paper written by Teach Me Maths in the style of Pearson Edexcel GCSE Mathematics (1MA1). Not an official Pearson Edexcel paper.

Turn over ►

Answer **ALL** questions. Write your answers in the spaces provided.
You must write down all the stages in your working.

- 1 Write $\frac{17}{50}$ as a percentage.

..... %
(1)

(Total for Question 1 is 1 mark)

- 2 Work out $26 - 3 \times 7$

.....
(1)

(Total for Question 2 is 1 mark)

- 3 Write down the value of the 6 in the number 31.064

.....
(1)

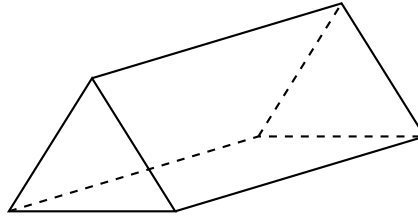
(Total for Question 3 is 1 mark)

- 4 Find $\sqrt{7.29}$

.....
(1)

(Total for Question 4 is 1 mark)

5 Here is a solid.



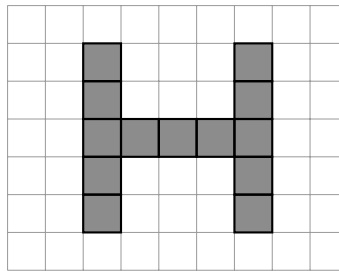
Write down the mathematical name of this solid.

.....
(1)

(Total for Question 5 is 1 mark)

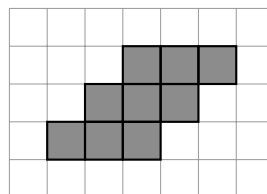
6 The diagrams show two shapes on square grids.

(a) On the shape below, draw all the lines of symmetry.



(1)

(b) Here is a different shape on the grid.



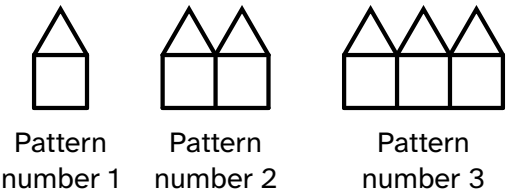
Write down the order of rotational symmetry of this shape.

.....

(1)

(Total for Question 6 is 2 marks)

7 Here are some patterns made from sticks.



(a) In the space below, draw Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	6	11	16		

(1)

(c) Will says,

“Pattern number 2 has 11 sticks.

So Pattern number 10 will have $5 \times 11 = 55$ sticks.”

Is Will correct?

You must give a reason for your answer.

(1)

(Total for Question 7 is 3 marks)

- 8** Rosa is driving to a port to catch a ferry.
The ferry leaves at 13 05
Rosa must arrive at the port at least 1 hour before the ferry leaves.
- Rosa leaves home at 09 10
Her drive to the port takes 145 minutes.
On the way, she also stops for 25 minutes to have lunch
and for 15 minutes to buy fuel.
- Does Rosa arrive at the port in time?
You must show how you get your answer.

(3)

(Total for Question 8 is 3 marks)

- 9 Here is some information about prices at an outdoor activity centre.

Outdoor Activity Centre: prices	
Day pass (adult)	£24 per day
Day pass (child)	£15 per day
Kayak hire	£9.50 per half hour
Archery	£12 per session

Una and her son spend 3 days at the centre.

They both need a day pass for each of the 3 days.

Una is an adult. Her son is a child.

They hire one kayak for $1\frac{1}{2}$ hours.

Her son has 2 archery sessions.

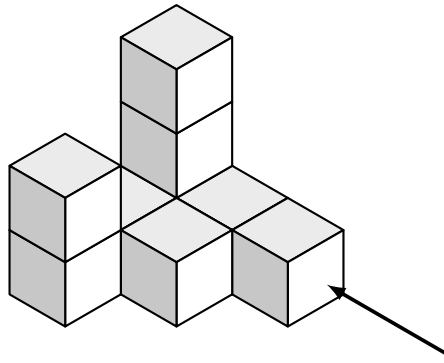
Una has £175

Show that Una has enough money to pay for all of these.

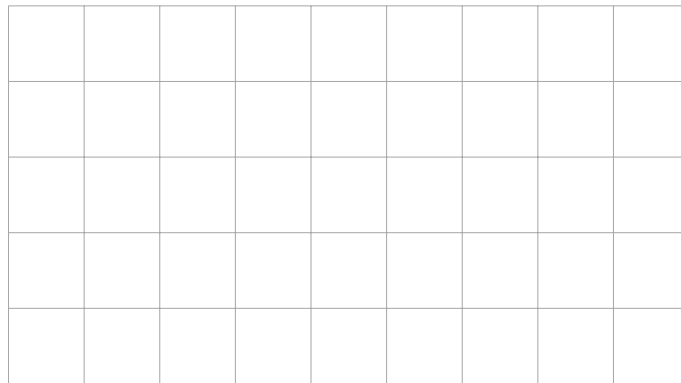
(4)

(Total for Question 9 is 4 marks)

- 10** The diagram shows a solid made from 9 centimetre cubes.



On the centimetre grid, draw the side elevation of the solid from the direction of the arrow.



(2)

(Total for Question 10 is 2 marks)

11 Here is a list of ingredients for making tomato soup for 6 people.

Tomato soup for 6 people

800 g tomatoes

2 onions

750 ml vegetable stock

150 ml cream

Niamh has

2.2 kg of tomatoes

6 onions

1.5 litres of vegetable stock

350 ml of cream

What is the greatest number of people Niamh can make soup for?

You must show how you get your answer.

..... people
(3)

(Total for Question 11 is 3 marks)

- 12** (a) Ida changes £380 into euros.

The exchange rate is £1 = €1.17

How many euros does Ida get?

€
(1)

- (b) After her holiday, Ida has €65 left.

She changes the €65 back into pounds.

The exchange rate is now £1 = €1.21

How much money does Ida get?

Give your answer correct to the nearest penny.

£
(2)

(Total for Question 12 is 3 marks)

- 13** A cafe owner asked 30 customers how many hot drinks they had yesterday.

The table shows information about the answers.

Number of hot drinks	0	1	2	3	4	5
Frequency	4	7	9	5	3	2

- (a) Write down the mode.

.....
(1)

- (b) Work out the mean number of hot drinks.
Give your answer correct to 1 decimal place.

.....
(3)

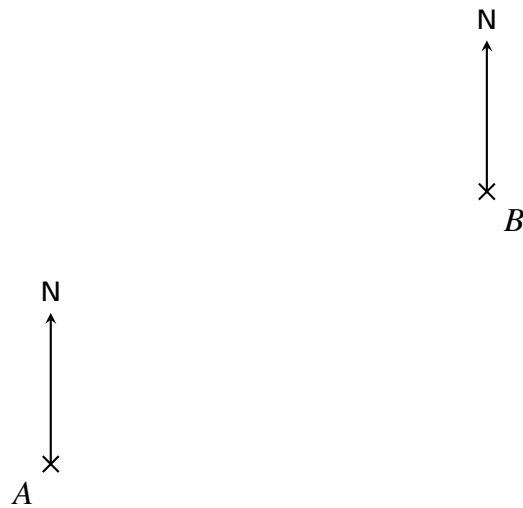
(Total for Question 13 is 4 marks)

14 Solve $6(2x - 5) = 39$

$x = \dots\dots\dots$
(3)

(Total for Question 14 is 3 marks)

- 15** The accurately drawn map shows the positions of two lighthouses, *A* and *B*.



- (a) Find the bearing of lighthouse *A* from lighthouse *B*.

..... °
(1)

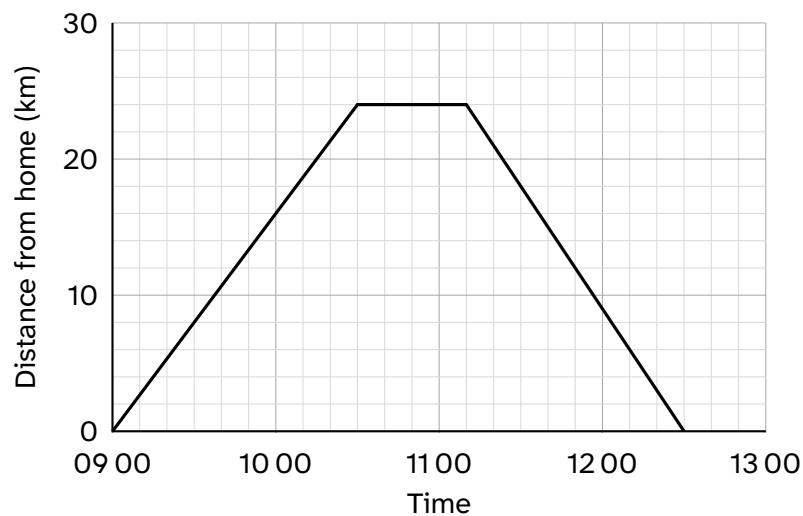
- (b) The scale of the map is 1 cm represents 2.5 km.

Work out the real distance between lighthouse *A* and lighthouse *B*.

..... km
(2)

(Total for Question 15 is 3 marks)

- 16** Kai cycled from his home to a country park.
He stopped at the country park and then cycled home.
Here is the travel graph for his journey.



- (a) For how many minutes did Kai stop at the country park?

..... minutes
(1)

- (b) How far from home was Kai at 12:10?

..... km
(1)

- (c) Work out Kai's average speed on his way home from the country park.
Give your answer in kilometres per hour.

..... km/h
(2)

(Total for Question 16 is 4 marks)

17 A garden centre sells only three types of plant: roses, lavender and ferns.

number of roses : number of lavender plants : number of ferns = 3:5:4

What fraction of the plants are **not** lavender plants?

.....
(2)

(Total for Question 17 is 2 marks)

18 There are only lemon sweets and lime sweets in tub *A* and in tub *B*.

In tub *A* there are 15 lemon sweets and 21 lime sweets.

In tub *B*,

number of lemon sweets : number of lime sweets = 2:3

Fatima is going to take at random a sweet from one of the tubs.

She wants a lemon sweet.

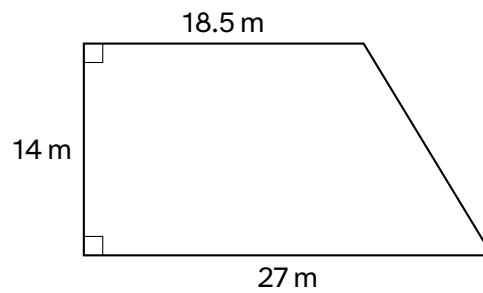
Which tub gives Fatima the greater probability of taking a lemon sweet?

You must show how you get your answer.

Tub
(3)

(Total for Question 18 is 3 marks)

- 19** The diagram shows a lawn in a park.
The lawn is in the shape of a trapezium.



*Diagram **NOT** accurately drawn*

The lawn needs 35 grams of lawn feed for each m^2

Lawn feed is sold in tubs.

Each tub holds 2.5 kg of lawn feed and costs £8.95

Work out the total cost of the tubs of lawn feed needed for this lawn.

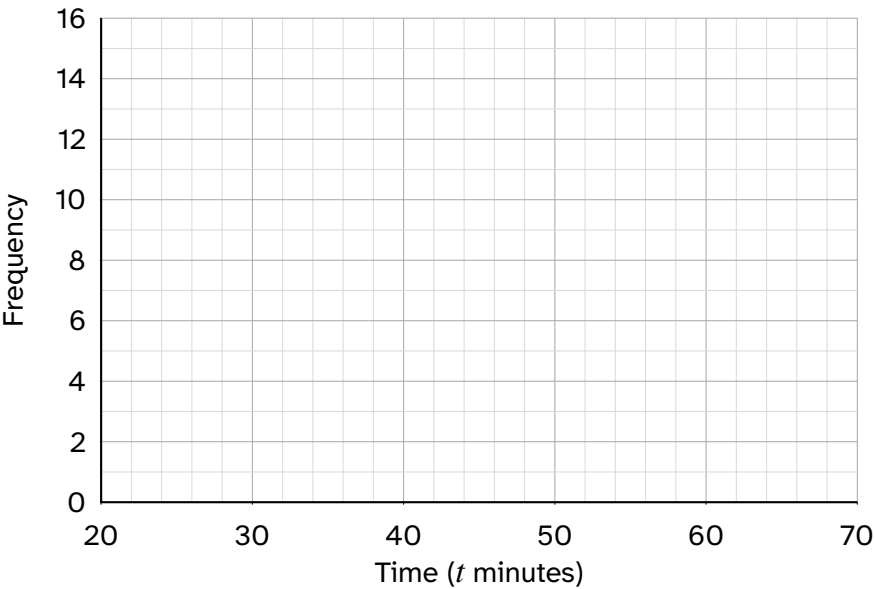
£
(4)

(Total for Question 19 is 4 marks)

20 The table shows information about the lengths of time, in minutes, that 40 visitors spent in an art gallery.

Time (t minutes)	Frequency
$20 < t \leq 30$	3
$30 < t \leq 40$	9
$40 < t \leq 50$	14
$50 < t \leq 60$	10
$60 < t \leq 70$	4

On the grid, draw a frequency polygon for the information in the table.



(2)

(Total for Question 20 is 2 marks)

- 21** A wooden building block is a solid cube.
Each edge of the cube is 5.5 cm long.
The mass of the cube is 0.12 kg.

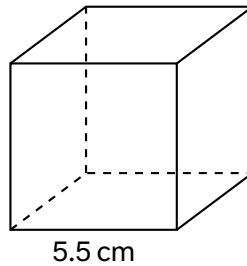


Diagram **NOT** accurately drawn

Work out the density of the wood.
Give your answer in g/cm^3 correct to 2 decimal places.

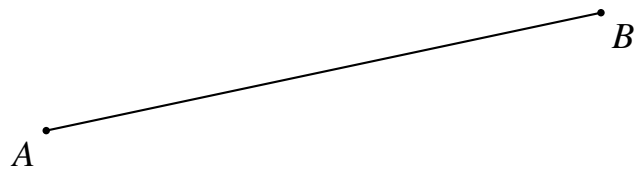
..... g/cm^3
(3)

(Total for Question 21 is 3 marks)

22 Here is a line segment AB .

Use ruler and compasses to construct the perpendicular bisector of AB .

You must show all your construction lines.



(2)

(Total for Question 22 is 2 marks)

23 Jacob, Maria and Tomas collect stickers.

Maria has 14 fewer stickers than Tomas.

Jacob has 3 times as many stickers as Maria.

Jacob also has twice as many stickers as Tomas.

Find the ratio of the numbers of stickers that Jacob, Maria and Tomas have.

Give your ratio in its simplest form, in the order Jacob : Maria : Tomas.

.....
(5)

(Total for Question 23 is 5 marks)

- 24** The number of visitors to a zoo in July was $\frac{3}{8}$ more than the number of visitors in June.
There were 24 750 visitors to the zoo in July.

How many more visitors were there in July than in June?

.....

(3)

(Total for Question 24 is 3 marks)

- 25** The stem and leaf diagram shows information about the ages of the 21 people at a yoga class.

2	4 7 8
3	1 3 5 5 9
4	0 2 2 4 6 8 8
5	1 3 7
6	0 5 8

Key: 2|4 represents 24 years

- (a) Find the median age.

..... years
(1)

- (b) Work out the range of the ages.

..... years
(1)

- (c) The median age of the people at a spin class is 34 years.

The range of the ages of these people is 51 years.

Compare the distribution of the ages of the people at the yoga class with the distribution of the ages of the people at the spin class.

(2)

(Total for Question 25 is 4 marks)

26 The table shows the price of a train ticket for a journey in 2025 and in 2026.

	2025	2026
Peak fare	£32.50	£36.40
Off-peak fare	£18.40	£20.70

(a) Tara says,

“The peak fare went up by more money than the off-peak fare,
so the percentage increase in the peak fare is greater.”

Is Tara correct?

You must show all your working.

(3)

(b) Tara works out the percentage increase in the off-peak fare like this.

$$\frac{2.30}{20.70} \times 100 = 11.1\%$$

What mistake has Tara made?

(1)

(Total for Question 26 is 4 marks)

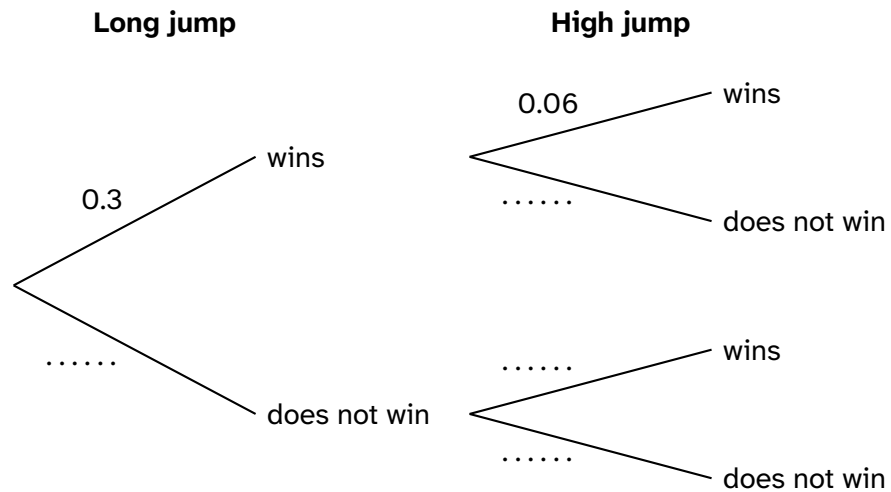
27 Ivy takes part in the long jump and the high jump at a sports day.

The probability that she wins the long jump is 0.3

The probability that she wins the high jump is 0.06

The two events are independent.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Ivy wins exactly one of the two events.

.....
(2)

(Total for Question 27 is 4 marks)

28 The top speed of a racing car is 83 metres per second.

Zac says,

“The top speed of the racing car is faster than 300 kilometres per hour.”

Is Zac correct?

You must show how you get your answer.

(2)

(Total for Question 28 is 2 marks)

29 (a) Simplify $(m^3)^5$

.....
(1)

(b) Simplify $x^4 \times x^9$

.....
(1)

(c) Expand $3p(p^2 - 4)$

.....
(1)

(Total for Question 29 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

Formulae Sheet

For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation Tier

Perimeter, area and volume

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

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

Volume of a prism = area of cross section $\times$ length

Where r is the radius and d is the diameter:

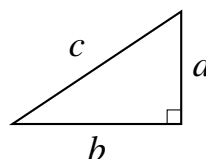
$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

Pythagoras' Theorem and Trigonometry

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

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

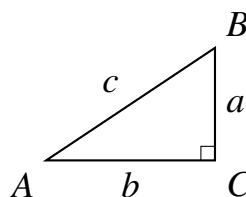


In any right-angled triangle ABC where a , b and c are the lengths of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c}$$

$$\cos A = \frac{b}{c}$$

$$\tan A = \frac{a}{b}$$



Compound Interest

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

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

Probability

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

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$