

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 1 (Non-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 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 must not use a calculator.**

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 Work out $-11 + 6$

.....
(1)

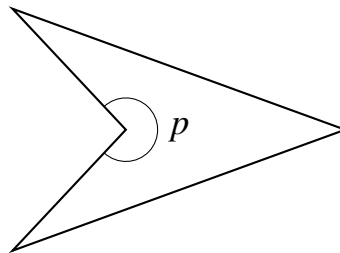
(Total for Question 1 is 1 mark)

- 2 Write 0.9 as a fraction.

.....
(1)

(Total for Question 2 is 1 mark)

- 3 Here is a quadrilateral.



Write down the mathematical name for the type of angle marked p .

.....
(1)

(Total for Question 3 is 1 mark)

4 Simplify $m + m + m + m + m + m$

.....
(1)

(Total for Question 4 is 1 mark)

5 Write down the multiple of 9 that is between 60 and 70

.....
(1)

(Total for Question 5 is 1 mark)

- 6** The pictogram shows information about the number of loaves of bread a bakery sold on Monday, on Tuesday and on Wednesday one week.

Monday	
Tuesday	
Wednesday	
Thursday	

Key:  represents 8 loaves

- (a) How many loaves did the bakery sell on Tuesday?

.....
(1)

- (b) On Thursday, the bakery sold 6 more loaves than on Tuesday.
Use this information to complete the pictogram.

(2)

- (c) How many more loaves did the bakery sell on Thursday than on Wednesday?

.....
(1)

(Total for Question 6 is 4 marks)

- 7** Ajay buys some food for a picnic.
He buys
 4 cartons of juice at 75p each
 some sandwiches costing £2.85 each.
Ajay pays with a £20 note.
He gets £2.75 change.
How many sandwiches did Ajay buy?

.....
(4)

(Total for Question 7 is 4 marks)

8 Jiya has a red ribbon, a blue ribbon and a green ribbon.

The red ribbon is x cm long.

The blue ribbon is 7 cm longer than the red ribbon.

The green ribbon is 3 times as long as the red ribbon.

(a) Write down an expression, in terms of x , for the length of the blue ribbon.

..... cm
(1)

(b) Write down an expression, in terms of x , for the length of the green ribbon.

..... cm
(1)

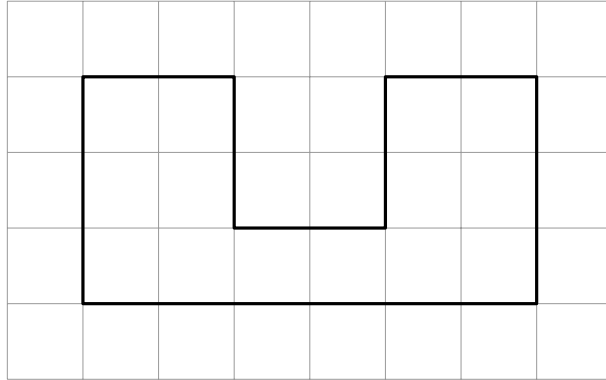
(c) The green ribbon is 54 cm long.

Work out the length of the red ribbon.

..... cm
(1)

(Total for Question 8 is 3 marks)

- 9 Here is a shape drawn on a centimetre grid.



- (a) Find the area of the shape.

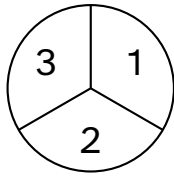
..... cm^2
(1)

- (b) Find the perimeter of the shape.

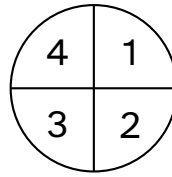
..... cm
(1)

(Total for Question 9 is 2 marks)

10 Here are two fair spinners at a fairground game.



Spinner *A*



Spinner *B*

Maddie spins both spinners.

She adds the number spinner *A* lands on to the number spinner *B* lands on to get the total.

(a) Complete the table to show all the possible totals.

		Spinner <i>B</i>			
Spinner <i>A</i>	+	1	2	3	4
	1	2		4	
	2		4		6
	3	4			7

(2)

(b) Chen says,

“A total of 4 is more likely than any other total.”

Is Chen correct?

Give a reason for your answer.

(1)

(Total for Question 10 is 3 marks)

11 At a concert there are 84 adults and 36 children.

Write down the ratio number of adults : number of children.

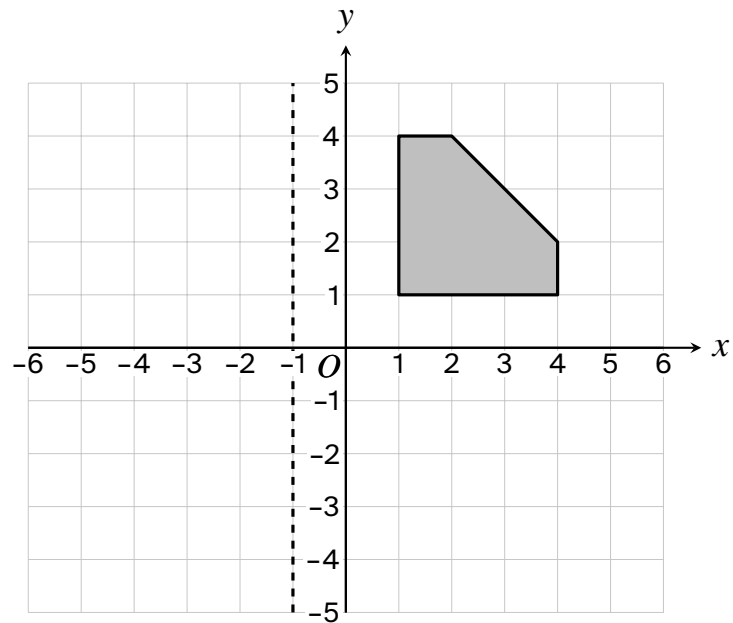
Give your ratio in its simplest form.

.....
(2)

(Total for Question 11 is 2 marks)

12 The diagram shows a shaded shape and a mirror line on a grid.

(a) On the grid, reflect the shaded shape in the mirror line.



(2)

(b) Write down the equation of the mirror line.

.....
(1)

(Total for Question 12 is 3 marks)

13 Hollie is taking part in a 1 km charity walk.

She has walked 350 m.

Hollie says,

“I have walked more than $\frac{1}{3}$ of the walk.”

Is Hollie correct?

You must show how you get your answer.

(2)

(Total for Question 13 is 2 marks)

14 Given that $7.4 \times 2.6 = 19.24$

(a) Work out 740×2.6

.....
(1)

(b) Work out $19.24 \div 26$

.....
(1)

(Total for Question 14 is 2 marks)

15 Here are the first five terms of a number sequence.

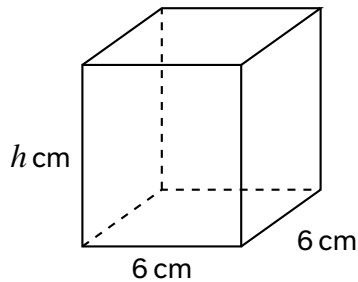
3 11 19 27 35

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

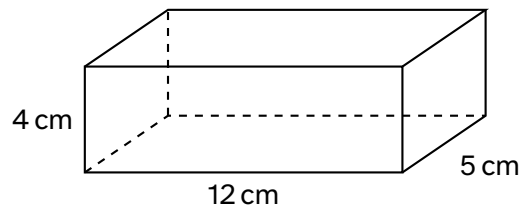
.....
(2)

(Total for Question 15 is 2 marks)

16 Here are two cuboids, A and B .



Cuboid A



Cuboid B

*Diagram **NOT** accurately drawn*

- (a) Cuboid A has a square base of side 6 cm .

The volume of cuboid A is 252 cm^3

Work out the value of h .

$h = \dots\dots\dots$
(2)

- (b) Zuzanna has a box in the shape of cuboid B .

She wants to cover all six faces of the box with paper.

She has a sheet of paper with an area of 250 cm^2 .

Does Zuzanna have enough paper?

You must show how you get your answer.

.....
.....
(3)

(Total for Question 16 is 5 marks)

17 Work out $8.12 \div 0.14$

.....

(3)

(Total for Question 17 is 3 marks)

18 Callum drives a coach from a depot to an airport.

He leaves the depot at 09 40

The distance from the depot to the airport is 105 miles.

On the way, Callum stops for a 25-minute break.

Callum thinks the coach will travel at an average speed of 45 miles per hour while it is being driven.

(a) If Callum is right, at what time will the coach arrive at the airport?

.....
(3)

(b) In fact, the average speed of the coach while it was being driven was less than 45 miles per hour.

How does this affect your answer to part (a)?

.....
.....
(1)

(Total for Question 18 is 4 marks)

- 19** (a) Work out $1\frac{2}{3} + 2\frac{3}{5}$
Give your answer as a mixed number.

.....
(2)

- (b) Show that $4\frac{1}{2} \div 1\frac{1}{5} = 3\frac{3}{4}$

.....
.....
.....
.....
(3)

(Total for Question 19 is 5 marks)

.....

- 20** Nadia asked 15 students how many minutes they spent on homework last night.
Here are her results.

18 32 25 41 16 37 23 29 44 35 21 38 26 47 31

Show this information in an ordered stem and leaf diagram.

Key:

(3)

(Total for Question 20 is 3 marks)

- 21 ABC is a straight line.
 BCD is a triangle with $DB = DC$.

$$x:y = 7:2$$

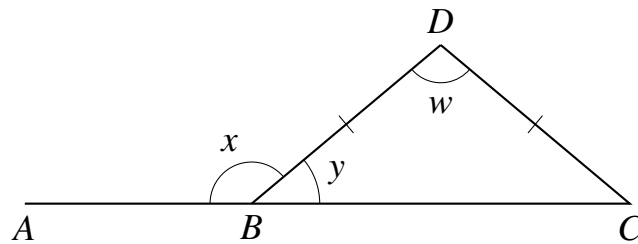


Diagram **NOT** accurately drawn

Work out the value of w .

You must show all your working.

$w = \dots\dots\dots$
(4)

(Total for Question 21 is 4 marks)

22 Saanvi fills an empty garden pond with water.

The pond holds 3140 litres of water when it is full.

Water flows into the pond at a rate of 19.6 litres per minute.

(a) Work out an estimate for the number of hours it takes to fill the pond.

..... hours
(3)

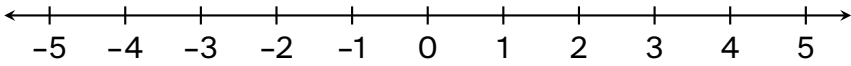
(b) Is your answer to part (a) an underestimate or an overestimate?

Give a reason for your answer.

.....
.....
(1)

(Total for Question 22 is 4 marks)

23 (a) Show the inequality $-4 \leq x < 1$ on the number line.



(2)

(b) Solve $9x + 2 \leq 5x + 20$

.....
(2)

(Total for Question 23 is 4 marks)

- 24** A vending machine in a museum exerts a force of 2400 newtons on the floor.
The part of the vending machine in contact with the floor is a rectangle 0.8 m by 0.75 m.

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

Work out the pressure exerted on the floor by the vending machine.

Give your answer in newtons/m²

..... newtons/m²
(2)

(Total for Question 24 is 2 marks)

25 a , b and c are three numbers.

$$a:b = 4:3$$

$$b:c = 5:2$$

(a) Find $a:b:c$

.....
(2)

(b) Write a as a fraction of $a + b + c$

.....
(2)

(Total for Question 25 is 4 marks)

26 A craft shop sells balls of wool and packs of buttons.

2 balls of wool and 3 packs of buttons cost £19.50

1 ball of wool and 2 packs of buttons cost £11.50

Molly wants to buy 4 balls of wool and 3 packs of buttons.

She has £28

Does Molly have enough money?

You must show all your working.

(5)

(Total for Question 26 is 5 marks)

- 27** (a) Katie says,
“ 4^{-2} is a negative number.”

Is Katie correct?

Give a reason for your answer.

(1)

- (b) Write $\frac{2^9 \times 8}{2^5}$ as a power of 2

.....
(2)
(Total for Question 27 is 3 marks)

28 $\mathbf{c} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$ $\mathbf{d} = \begin{pmatrix} -1 \\ 4 \end{pmatrix}$

Work out $3\mathbf{c} - 2\mathbf{d}$

Write your answer as a column vector.

$$\begin{pmatrix} \\ \end{pmatrix}$$

(2)

(Total for Question 28 is 2 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:

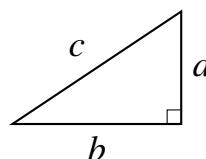
$$\text{Circumference of a circle} = 2\pi r = \pi d$$

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

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:

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

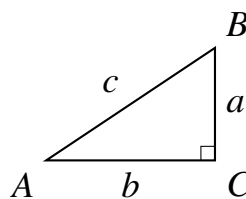


In any right-angled triangle ABC where a , b and c are the lengths of the sides and c is the hypotenuse:

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

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

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



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 :

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