

Write your name and the date clearly.

Name

Date

Teach Me Maths

GCSE (9–1) Mathematics

For Pearson Edexcel GCSE Mathematics (1MA1)

Mock Set A

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** Write 43% as a decimal.

.....
(1)

(Total for Question 1 is 1 mark)

- 2** Write down the value of the 8 in the number 58 304

.....
(1)

(Total for Question 2 is 1 mark)

- 3** Simplify $2 \times w \times 7$

.....
(1)

(Total for Question 3 is 1 mark)

- 4** Change 7 kg into grams.

..... grams
(1)

(Total for Question 4 is 1 mark)

5 Find the square root of 81

.....
(1)

(Total for Question 5 is 1 mark)

6 Here is a price list at a garden centre.

Garden centre	
Packet of seeds	£1.35 each
Plant pots	3 for £1.25
Watering can	£6.49

Rosie buys

4 packets of seeds

12 plant pots

1 watering can.

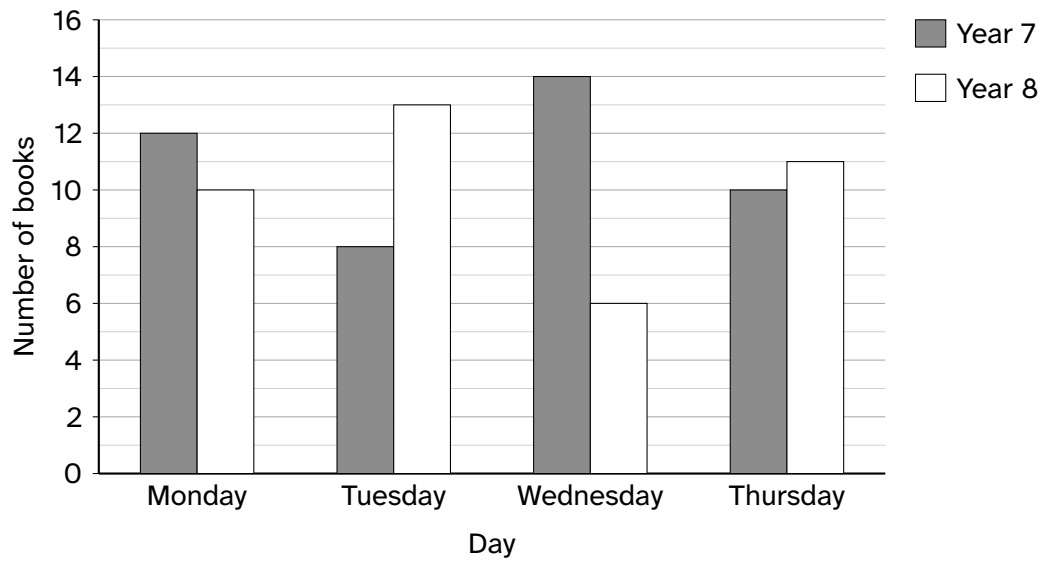
She pays with two £10 notes.

Work out how much change Rosie should get.

£
(4)

(Total for Question 6 is 4 marks)

- 7 The dual bar chart shows the number of library books borrowed by students in Year 7 and in Year 8 on four days last week.



- (a) How many books did Year 8 borrow on Tuesday?

.....
(1)

- (b) Megan says,

“Altogether, Year 7 borrowed more books than Year 8 on these four days.”

Is Megan correct?

You must show how you get your answer.

.....
.....
(2)

(Total for Question 7 is 3 marks)

- 8 OA , OB , OC and OD are four straight lines.

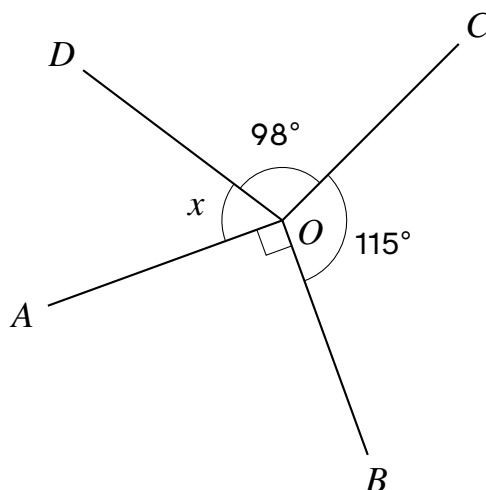


Diagram **NOT** accurately drawn

- (i) Work out the size of the angle marked x .

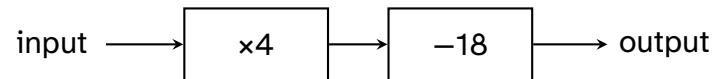
.....[°]
(2)

- (ii) Give a reason for your answer.

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

(Total for Question 8 is 3 marks)

9 Here is a number machine.



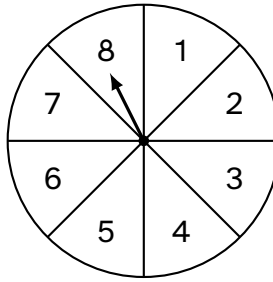
(a) Work out the output when the input is 8

.....
(1)

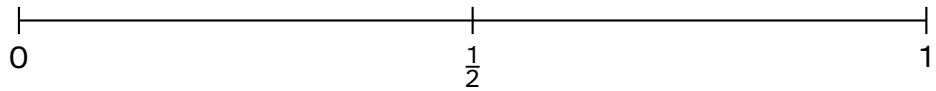
(b) Work out the input when the output is -6

.....
(2)
(Total for Question 9 is 3 marks)

- 10** Ella has a fair 8-sided spinner.
She spins the spinner once.



- (a) On the probability scale, mark with a cross (×) the probability that the spinner lands on an even number.



(1)

- (b) Omar says,

“The probability that the spinner lands on a factor of 12 is more than $\frac{1}{2}$ ”

Is Omar correct?

Give a reason for your answer.

(1)

(Total for Question 10 is 2 marks)

- 11 (a) Work out an estimate for the value of $\frac{57.8 \times 3.7}{0.21}$

.....
(2)

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

Give a reason for your answer.

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

- (c) Given that $5.6 \times 1.3 = 7.28$

Write down the value of 560×13

.....
(1)

(Total for Question 11 is 4 marks)

.....

12 (a) Work out $\frac{7}{10} - \frac{1}{6}$

Give your answer as a fraction in its simplest form.

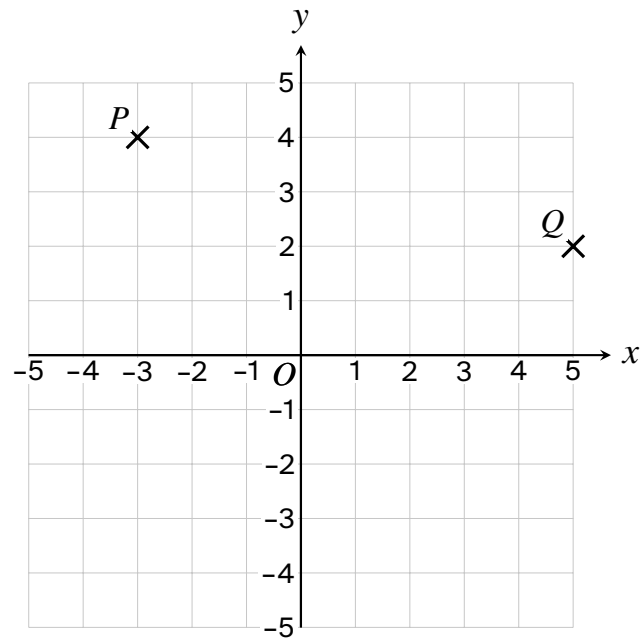
.....
(2)

(b) Show that $\frac{5}{12} \times \frac{8}{15} = \frac{2}{9}$

.....
.....
.....
.....
(2)

(Total for Question 12 is 4 marks)

- 13** The points P and Q are shown on the grid.



- (a) Write down the coordinates of the point P .

(..... ,)
(1)

- (b) Find the coordinates of the midpoint of PQ .

(..... ,)
(1)

(Total for Question 13 is 2 marks)

14 Tickets for a wildlife park are booked online.

An adult ticket costs £16

A child ticket costs £9

There is a booking fee of £1.50 for each booking.

Sam books a adult tickets and c child tickets in one booking.

The total cost of the booking is £ T .

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

.....

(3)

(Total for Question 14 is 3 marks)

- 15** A gardener plants 240 bulbs in a park.
 $\frac{1}{4}$ of the bulbs are red.
20% of the rest of the bulbs are yellow.
The remaining bulbs are white or purple.
There are the same number of white bulbs as purple bulbs.

What percentage of the 240 bulbs are white?

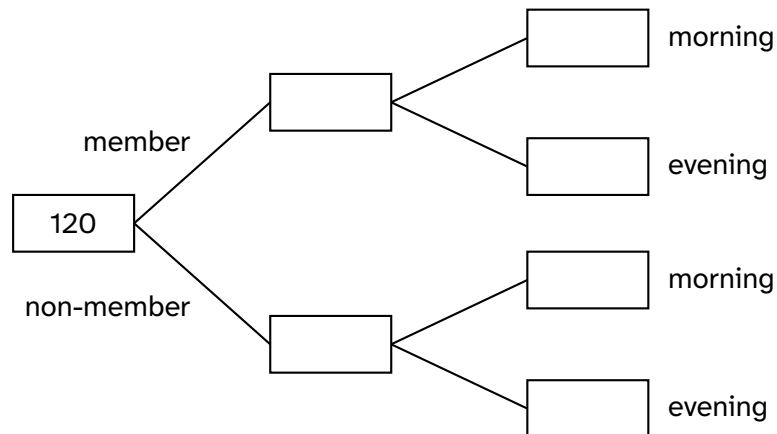
..... %
(4)
(Total for Question 15 is 4 marks)

- 16** Work out 6.7×4.8

.....
(3)
(Total for Question 16 is 3 marks)

- 17** 120 people went to a leisure centre one day.
 Each person was a member or a non-member.
 Each person went to a morning session or to an evening session.
 75 of the people were members.
 $\frac{2}{5}$ of the members went to an evening session.
 48 of the people went to an evening session.

(a) Use this information to complete the frequency tree.



(3)

- (b) One of the 120 people is chosen at random.
 Find the probability that this person is a non-member who went to a morning session.

.....
 (2)

(Total for Question 17 is 5 marks)

18 Here are the ingredients for making 12 cheese muffins.

Ingredients for 12 cheese muffins

240 g self-raising flour

90 g grated cheese

50 g butter

150 ml milk

2 eggs

Priya wants to make 30 cheese muffins.

Work out how much grated cheese she needs.

..... g
(2)

(Total for Question 18 is 2 marks)

19 (a) Write 396 as a product of its prime factors.

.....
(2)

(b) Find the highest common factor (HCF) of 396 and 540

.....
(2)
(Total for Question 19 is 4 marks)

- 20** $ABCDEFGH$ is a regular octagon.
 ABT is an equilateral triangle.

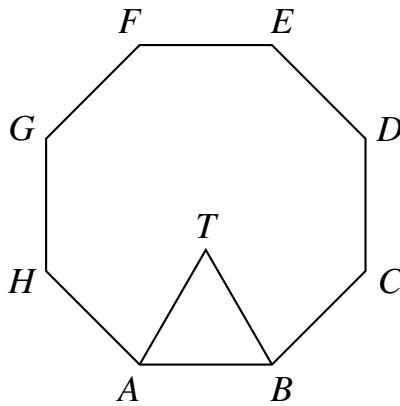
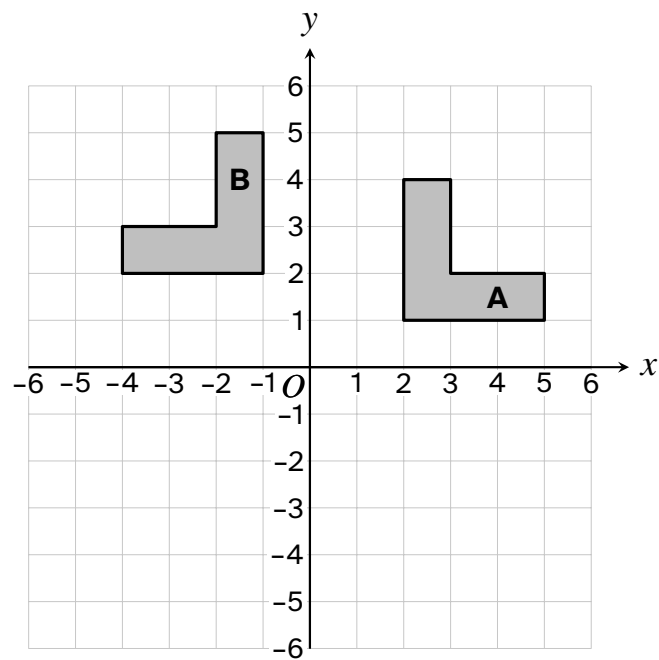


Diagram **NOT** accurately drawn

Work out the size of angle HAT .
 You must show all your working.

.....[°]
 (3)
(Total for Question 20 is 3 marks)

21 Shape *A* and shape *B* are drawn on the grid.



Describe fully the single transformation that maps shape *A* onto shape *B*.

(2)

(Total for Question 21 is 2 marks)

22 A youth club has 140 members.

Each member is a junior or a senior.

number of juniors : number of seniors = 4:3

$\frac{3}{8}$ of the juniors go on a summer trip.

45% of the seniors go on the summer trip.

How many of the 140 members do **not** go on the summer trip?

You must show all your working.

.....

(5)

(Total for Question 22 is 5 marks)

23 Zara was asked to write $7^6 \times 7^3 \div 7^4$ as a single power of 7

Here is her working.

$$7^6 \times 7^3 = 7^{18}$$

$$7^{18} \div 7^4 = 7^{14}$$

Zara's answer is wrong.

(a) Explain what is wrong with Zara's method.

(1)

(b) Work out the correct answer.

Give your answer as a power of 7

.....
(1)
(Total for Question 23 is 2 marks)

24 (a) Write 4.7×10^{-3} as an ordinary number.

.....
(1)

(b) Work out $(4 \times 10^5) \times (7 \times 10^3)$
Give your answer in standard form.

.....
(2)

(Total for Question 24 is 3 marks)

25 In a sale, all the normal prices in a sports shop are reduced by 35%.

Ravi buys a pair of football boots in the sale.

He pays £52 for the boots.

How much money does Ravi save by buying the boots in the sale?

£
(3)

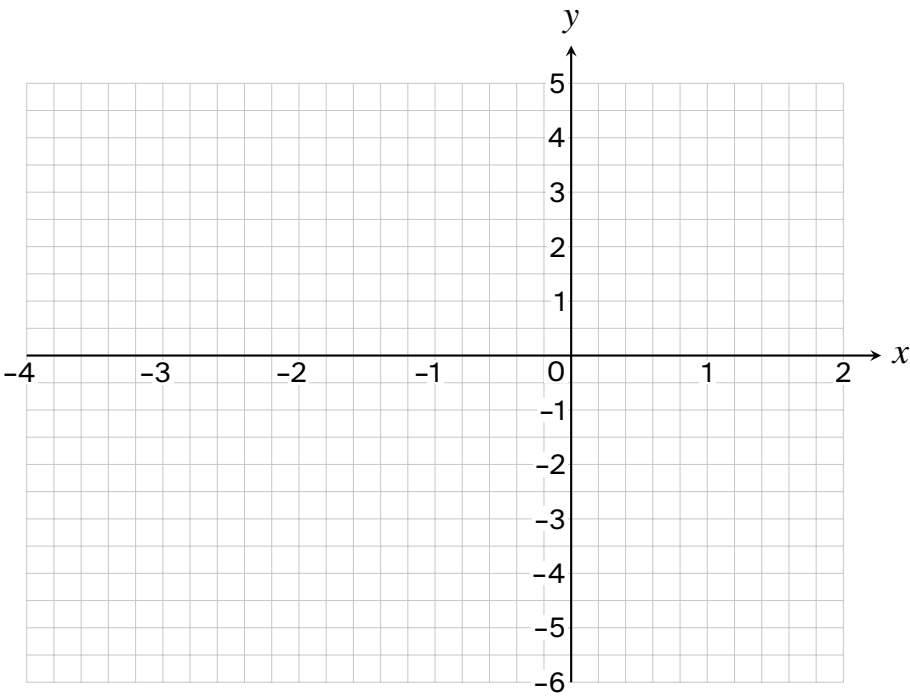
(Total for Question 25 is 3 marks)

26 (a) Complete the table of values for $y = x^2 + 2x - 4$

x	-4	-3	-2	-1	0	1	2
y	4		-4			-1	

(2)

(b) On the grid, draw the graph of $y = x^2 + 2x - 4$ for values of x from -4 to 2



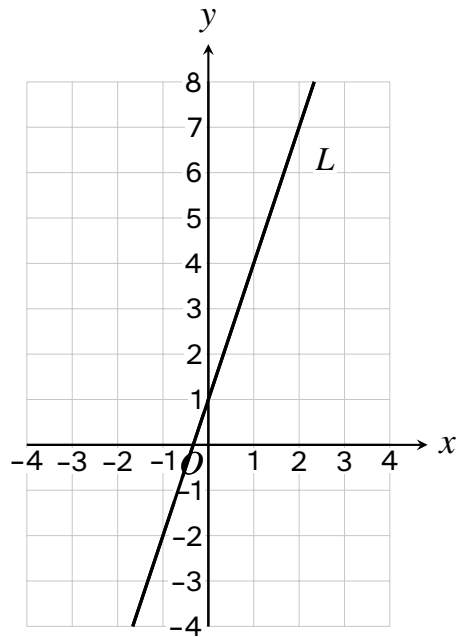
(2)

(c) Use the graph to find estimates of the solutions of $x^2 + 2x - 4 = 0$

.....
(2)

(Total for Question 26 is 6 marks)

27 The straight line L is drawn on the grid.



(a) Find an equation for L .

.....
(3)

(b) The point P has coordinates $(20, 62)$

Does P lie on the line L ?

You must show how you get your answer.

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

(Total for Question 27 is 4 marks)

28 Write down the exact value of $\tan 45^\circ$

.....

(1)

(Total for Question 28 is 1 mark)

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:

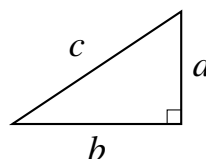
$$\text{Circumference of a circle} = 2\pi r = \pi d$$

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

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:

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

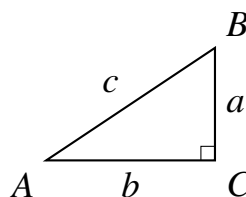


In any right-angled triangle ABC where a , b and c are the lengths of the sides and c is the hypotenuse:

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

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

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



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 :

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