Write your name here

Surname	Other names

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

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics

Paper 1 (Non-Calculator)

Foundation Tier

Specimen Papers Set 2
Time: 1 hour 30 minutes

Paper Reference
1MA1/1F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

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.*
- **Calculators may not be used.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out**.

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.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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PEARSON

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Find 10% of £320

£ 32

(Total for Question 1 is 1 mark)

2 Write 0.8 as a percentage.

80 %

(Total for Question 2 is 1 mark)

3 (a) Work out $84 \div 3$

28

(1)

(b) Work out 0.17×6000

1020

(1)

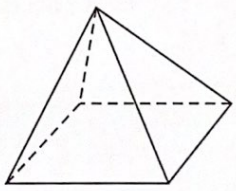
(c) Work out $(-2)^3$

-8

(1)

(Total for Question 3 is 3 marks)

4 Here is a square-based pyramid.



(i) How many faces does the pyramid have?

5

(ii) How many edges does the pyramid have?

8

(Total for Question 4 is 2 marks)

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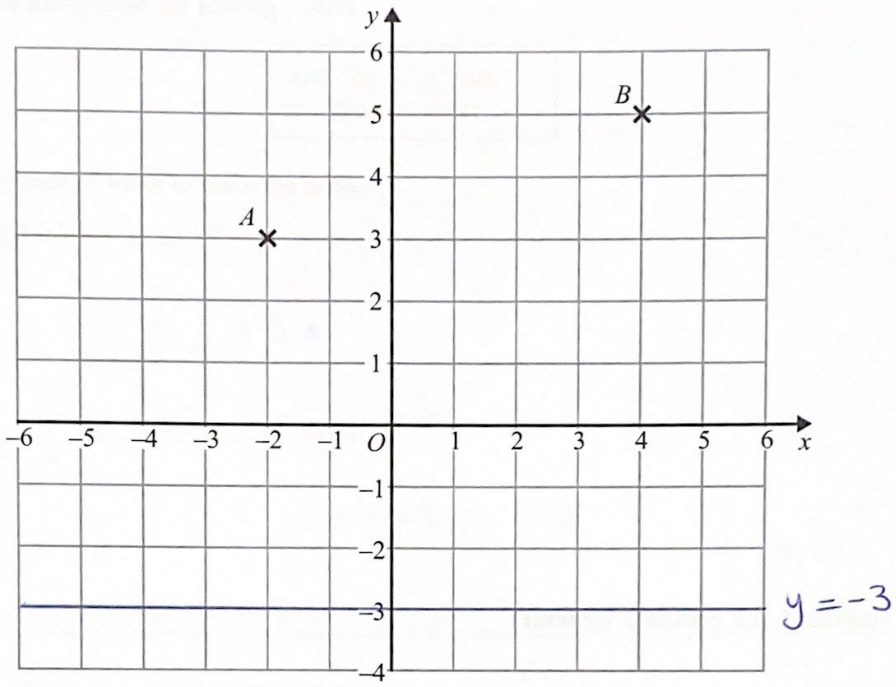

(a) Write down the coordinates of point B.

(4 , 5)

(1)

(b) Find the coordinates of the midpoint of AB.

$\left(\frac{4+(-2)}{2}, \frac{5+3}{2}\right) = (1, 4)$

(1 , 4)

(1)

(c) On the grid, draw the line with equation $y = -3$

(1)

(Total for Question 5 is 3 marks)

6 Here are the instructions for making a drink.

Add 100 m*l* of juice to 2 litres of water

Dev uses 5 litres of water to make the drink.

How much drink has he made?

$\frac{5}{2} = 2.5$

$2.5 \times 100\text{ ml} = 250\text{ ml}$

$5 + 0.25 = 5.25$

5.25

(Total for Question 6 is 3 marks)

7 In a box there are three types of chocolates.

There are 6 plain chocolates,
8 milk chocolates
and 10 white chocolates.

Ben takes at random a chocolate from the box.

(a) Write down the probability that Ben takes a plain chocolate.

$\frac{6}{6+8+10} = \frac{6}{24} = \frac{1}{4}$ $\frac{1}{4}$

(2)

Deon takes 2 chocolates from the box.

(b) Write down all the possible combinations of types of chocolates that Deon can take.

PP, PM, PN, MM, MW, W, W

(2)

(Total for Question 7 is 4 marks)

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8 8 identical pens cost £12
Work out the cost of 10 of these pens.

$\frac{12}{8} = 1.5$

$10 \times 1.5 = 15$

£ 15

(Total for Question 8 is 2 marks)

9 Here are five fractions.

$\frac{2}{8}$ $\frac{10}{40}$ $\frac{12}{48}$ $\frac{5}{24}$ $\frac{20}{80}$

One of these fractions is **not** equivalent to $\frac{1}{4}$

(a) Write down this fraction.

$\frac{5}{24}$

(1)

(b) Work out $\frac{2}{7} + \frac{1}{14}$

$\frac{4}{14} + \frac{1}{14} = \frac{5}{14}$

$\frac{5}{14}$

(2)

(c) Work out $\frac{4}{5} \div \frac{3}{10}$
Give your answer in its simplest form.

$= \frac{4}{5} \times \frac{10}{3} = \frac{40}{15} = \frac{8}{3} = 2\frac{2}{3}$

$2\frac{2}{3}$

(2)

(Total for Question 9 is 5 marks)

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10 (a) Solve $3x + 7 = 1$

$3x = -6$

$x = -2$

$x =$ -2

(2)

(b) $f = 6$
$g = 5$

Work out the value of $3f - 2g$

$3(6) - 2(5) = 18 - 10 = 8$

8

(2)

(Total for Question 10 is 4 marks)

11 Write down three different multiples of 4 that add up to 40

4, 8, 28

4, 8, 28

(Total for Question 11 is 2 marks)

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12 Helen has 80 books to sell.

Each book is Fiction or Non-fiction.
The ratio of the number of Fiction books to the number of Non-fiction books is 3:1

Each book has a normal price of £10
Helen reduces the price of all the Non-fiction books.

Non-fiction
All books ½ price

Helen sells all 80 books.

Work out the total amount of money Helen will receive.

80 books = 60 fiction + 20 nonfiction

$60 \times 10 = 600$
$20 \times 5 = 100$ (+)
700

£ 700

(Total for Question 12 is 4 marks)

13 Ryan and Carl each get paid a basic pay of £60 per day.

One day, Ryan also gets a bonus of 25% of his basic pay.
Carl also gets £20 in tips from customers.

Work out the difference between the total amounts of money that Ryan and Carl each get.

Ryan = 60 + 15 = 75
Carl = 60 + 20 = 80
80 − 75 = 5

£5

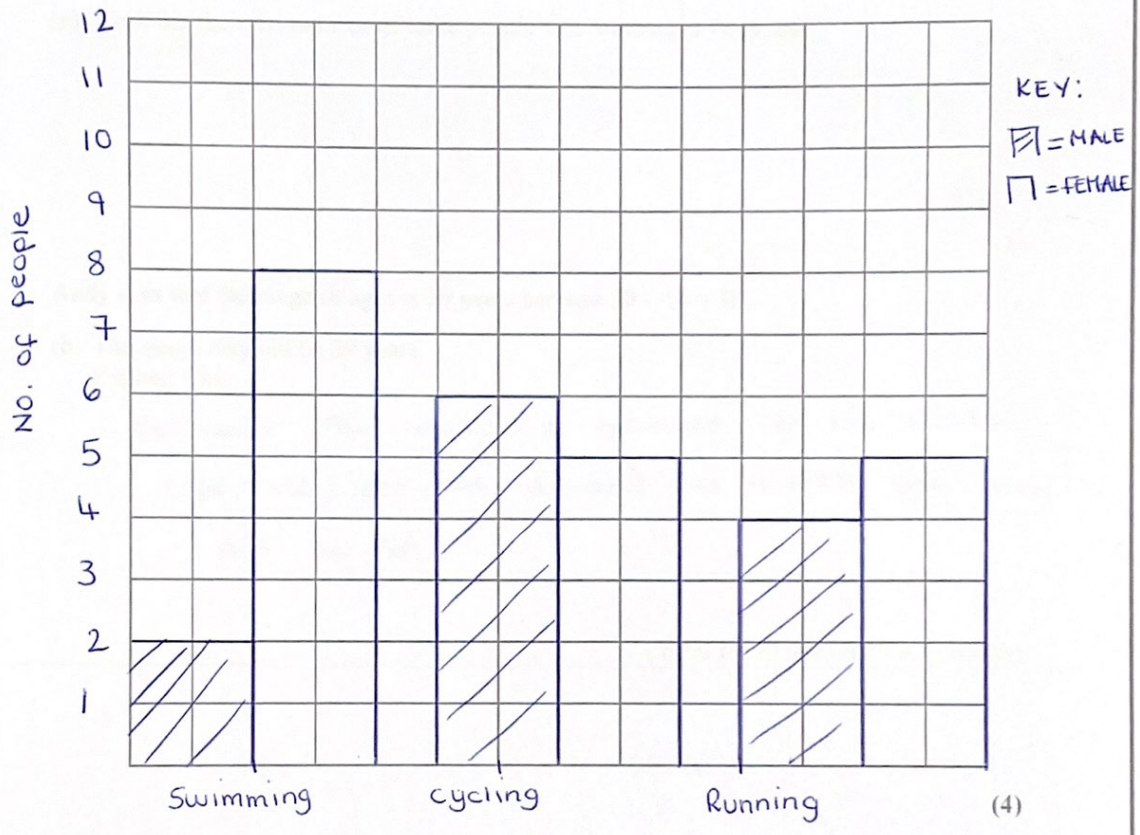
(Total for Question 13 is 3 marks)

14 Some people were asked if they liked swimming or cycling or running.

The table shows the results for the males and the results for the females.

	Swimming	Cycling	Running
Male	2	6	4
Female	8	5	5

(a) On the grid, draw a bar chart to show this information.



(4)

(b) Work out the percentage of the 30 people that are female.

$$\frac{8+5+5}{30} = \frac{18}{30} = \frac{9}{15} = \frac{3}{5} = 0.6$$

60 %

(2)

(Total for Question 14 is 6 marks)

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15 The table shows information about the ages of all the people at a party.

Age (years)	Frequency
11 – 20	6
21 – 30	16
31 – 40	10
41 – 50	8

(a) Work out the total number of these people who were aged 40 or less.

32

(1)

Andy says that the range of ages is 39 years because 50 – 11 = 39

(b) The range may not be 39 years.
Explain why.

Because the data is grouped, so the lowest age may not be 11 and the highest age may not be 50.

(1)

(Total for Question 15 is 2 marks)

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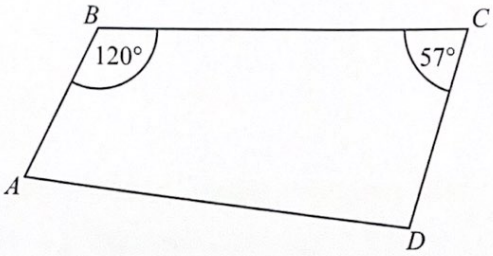
16 The diagram shows a quadrilateral $ABCD$.



Is AB parallel to DC?
You must give your reasoning.

$120 + 57 = 177$
$177 \times 2 = 354 \neq 360$
So the other two angles don't satisfy alternate angles, so AB and DC aren't parallel.

(Total for Question 16 is 3 marks)

17 Irena sells ice creams.
One day she sells 80 ice creams.
The next day she sells 108 ice creams.

Work out the percentage increase in the number of ice creams she sells.

$\frac{108 - 80}{80} = \frac{28}{80} = \frac{14}{40} = \frac{7}{20} = \frac{35}{100} = 35\%$

35 %

(Total for Question 17 is 3 marks)

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18 Dimitar has 20 sweets.
Pip also has 20 sweets.

Dimitar gives Pip x sweets.

Dimitar then eats 5 of his sweets.
Pip then eats half of her sweets.

Write expressions for the number of sweets Dimitar and Pip now have.

D: $20 - x - 5 = 15 - x$

P: $\frac{20 + x}{2}$

Dimitar $15 - x$ Pip $\frac{20+x}{2}$

(Total for Question 18 is 3 marks)

19 (a) Factorise $y^2 + 27y$

$y(y+27)$

(1)

(b) Simplify $(t^3)^2$

t^6

(1)

(c) Simplify $\frac{w^9}{w^4}$

w^5

(1)

(Total for Question 19 is 3 marks)

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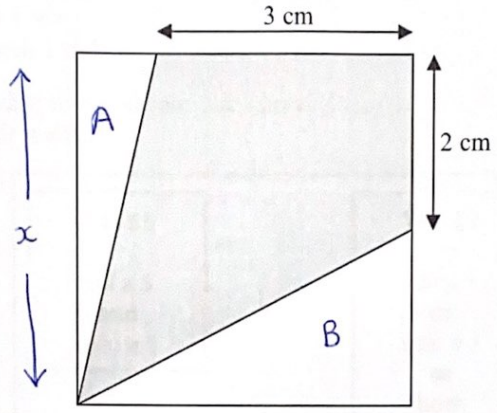
20 The diagram shows a square with perimeter 16 cm.



Work out the proportion of the area inside the square that is shaded.

$x = \frac{16}{4} = 4$

$\text{Area}_A = 1 \times 4 \times \frac{1}{2} = 2$

$\text{Area}_B = \frac{1}{2} \times 4 \times 2 = 4$

Area of square $= 16$

Shaded: $\frac{16 - 6}{16} = \frac{10}{16} = \frac{5}{8}$

$\frac{5}{8}$

(Total for Question 20 is 5 marks)

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21 David has designed a game.
He uses a fair 6-sided dice and a fair 5-sided spinner.
The dice is numbered 1 to 6
The spinner is numbered 1 to 5

Each player rolls the dice once and spins the spinner once.
A player can win £5 or win £2

Win £5	**Win £2**
roll a 5 **and** spin a 5	roll a 1 **or** spin a 1 **or** both

David expects 30 people will play his game.
Each person will pay David £1 to play the game.

(a) Work out how much profit David can expect to make.

Win £5 $= \frac{1}{6} \times \frac{1}{5} = \frac{1}{30}$ = 1 person

Win £2 $= \frac{5}{30} + \frac{4}{30} + \frac{1}{30} = \frac{10}{30} = \frac{1}{3}$ = 10 people

$5 + 10 \times 2 = 25$

$30 - 25 = 5$

£ 5

(4)

(b) Give a reason why David's actual profit may be different to the profit he expects to make.

This value only represents a likelihood not certainty as they are based on probabilities.

(1)

(Total for Question 21 is 5 marks)

22 Triangle ABC has perimeter 20 cm.

$AB = 7$ cm.
$BC = 4$ cm.

By calculation, deduce whether triangle ABC is a right-angled triangle.

$20 - 7 - 4 = 9$

$7^2 + 4^2 = 49 + 16 = 65 \neq 9^2 = 81$

So ABC is not a right-angle mangle

(Total for Question 22 is 4 marks)

23 One sheet of A3 card has area $\frac{1}{8}$ m^2.

The card has a mass of 160 g per m^2.

Work out the total mass of 25 sheets of A3 card.

$\frac{1}{8} \times 160 = 20$

$20 \times 25 = 500$

500 g

(Total for Question 23 is 4 marks)

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24 Here are the first five terms of a sequence.

2	8	18	32	50	
	6	10	14	18	22

(a) Find the next term of this sequence.

72

(1)

The nth term of a different sequence is $3n^2 - 10$

(b) Work out the 5th term of this sequence.

$3 \times 25 - 10 = 65$

65

(1)

(Total for Question 24 is 2 marks)

25 Write 504 as a product of powers of its prime factors.

$504 \div 2 = 252$

$252 \div 2 = 126$

$126 \div 2 = 63$

$63 \div 3 = 21$

$21 \div 3 = 7$

$504 = 2^3 \times 3^2 \times 7$

$2^3 \times 3^2 \times 7$

(Total for Question 25 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS