Write your name here

Surname	Other Names

Mathematics
Practice Set A
Paper 2 (Calculator)
Foundation Tier

Time: 1 hour 30 minutes

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 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.

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1 Write $\frac{3}{25}$ as a percentage.

.... %
(Total for Question 1 is 1 mark)

2 Write 8.27 correct to 1 decimal place.

....
(Total for Question 2 is 1 mark)

3 Write down a 5 digit number that has 8 as its thousands digit.
You can only use the digit 8 once.

....
(Total for Question 3 is 1 mark)

4 Work out the value of 5×10^4

....
(Total for Question 4 is 1 mark)

5 (a) Change 6500 millilitres to litres

.... litres
(1)

(b) Change 0.49 kilograms to grams.

.... grams
(1)

(c) Change 85 cm to metres.

.... metres
(1)
(Total for Question 5 is 3 marks)

6   Write down all the factors of 30

....

(Total for Question 6 is 2 marks)

7   Write down two prime numbers that have a sum of 18

.... , ...

(Total for Question 7 is 2 marks)

8   Here are three number cards

$$9 \quad 2 \quad 6$$
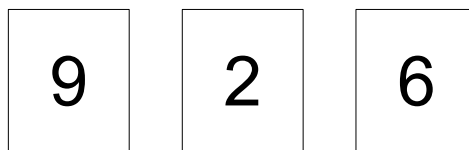
Write down all the possible **two-digit numbers** that can be made using the cards.

(Total for Question 8 is 2 marks)

9 Mason wants to buy 8 pens.

Each pen costs 37p

Mason pays with a £10 note.

(a) Work out how much change Mason will get from £10.

£................................
(2)

(b) When in the shop Mason finds out that the price of the pens has been reduced.

How does this affect the amount of change he will get?

....

....
(1)

(Total for Question 9 is 3 marks)

---

10 A shop sells washing detergent in 648 ml bottles.

Jacob has no washing detergent.
He estimates that he does 3 washes a week, using 30 ml each wash.

Jacob wants to buy enough washing detergent for 16 weeks.

How many bottles of washing detergent does Jacob need to buy?

....

(Total for Question 10 is 3 marks)

11 Abbie runs a distance of 200 metres in 25 seconds.

(a) What is her average speed?

....…… m/s
(2)

Bonnie runs at an average speed 4 metres per second for 240 seconds.

(b) How many metres does Bonnie run?

....…… m
(2)

(Total for Question 11 is 4 marks)

12 (a) Solve $x + x + x = 42$

$x =$ ....
(1)

(b) Solve $\dfrac{36}{y} = 4$

$y =$ ....
(1)

(c) Solve $a - 8 = 19$

$a =$ ....
(1)

(Total for Question 12 is 3 marks)

13 The table shows some information about the favourite sport of some students.

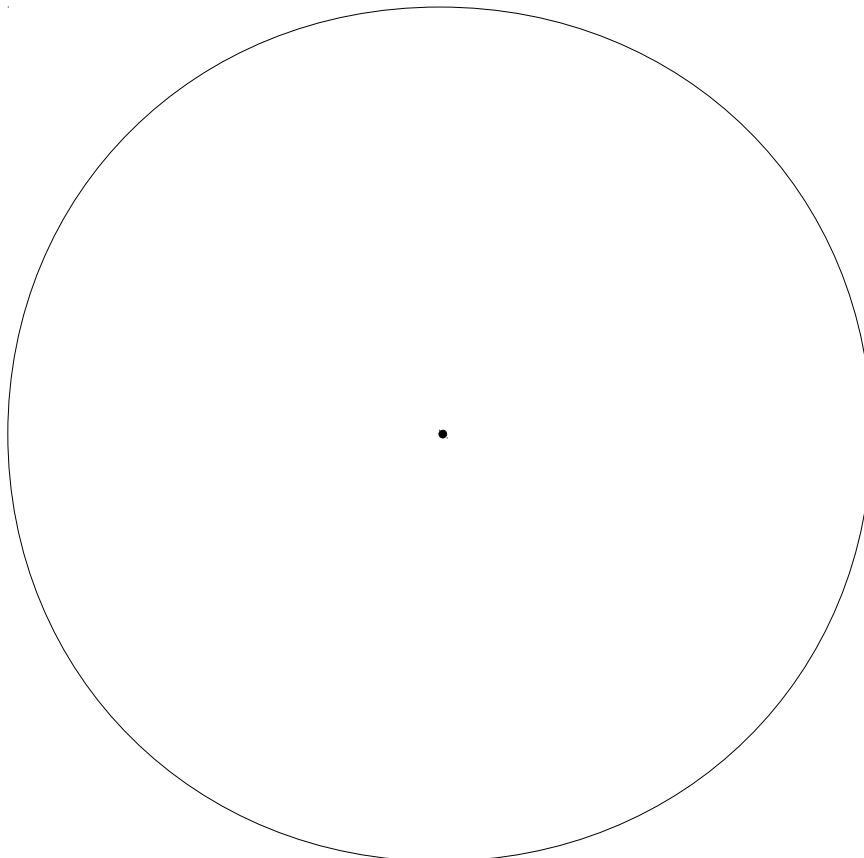| Colour	Frequency
Football	23
Hockey	12
Netball	15
Rugby	22

(a) A student is selected at random.

i) Find the probability their favourite sport is netball.

…..........................

(1)

ii) Find the probability their favourite sport is **not** netball.

…..........................
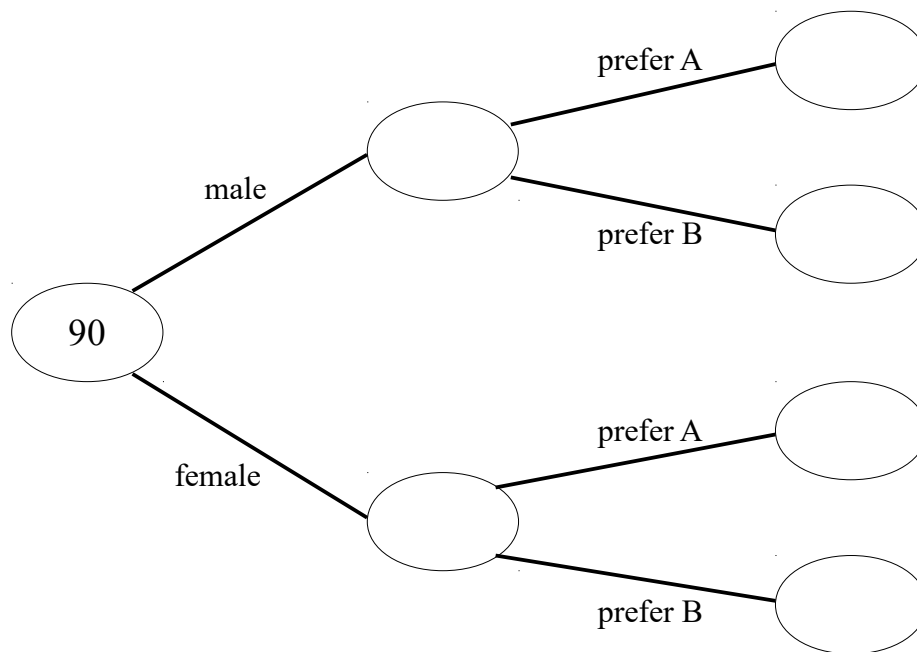
(1)

(b) Draw an accurate pie chart to show this information.

(4)

(Total for Question 13 is 6 marks)

14 Caleb makes a cola drink.
He is doing a taste test.
He asks 90 people if they prefer cola A or cola B.

42 of the people asked were male.
29 of the 51 people that prefer cola A are female.

Use this information to complete the frequency tree.

male — prefer A

prefer B

90

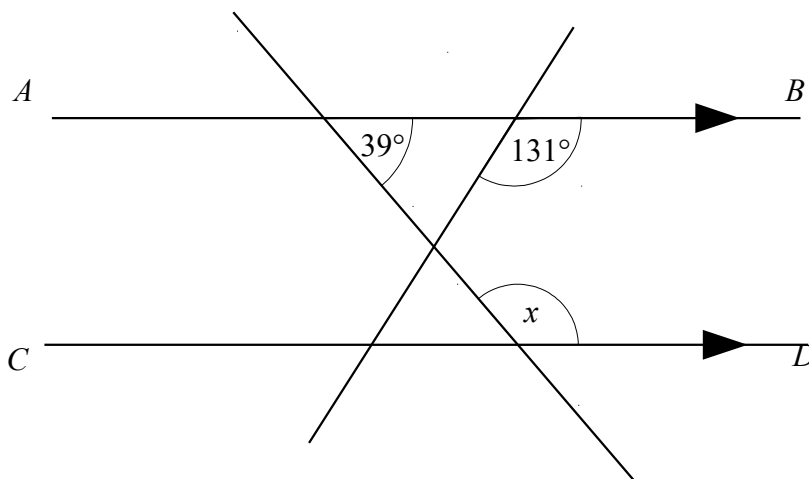female — prefer A

prefer B

(Total for Question 14 is 3 marks)

15 The table shows information about the number of points scored in a game.

Points	Frequency
0	7
1	13
2	16
3	8
4	4
5	2

Work out the mean number of points per game.

…...........................

(Total for Question 15 is 3 marks)

16

AB and *CD* are parallel lines.

(a) Find the size of angle *x*

……………………

(1)

(b) Give a reason for your answer.

…………………………………………………………………………………………………

…………………………………………………………………………………………………

(1)

(Total for Question 16 is 2 marks)

17 Here are a list of ingredients for making 16 mince pies.
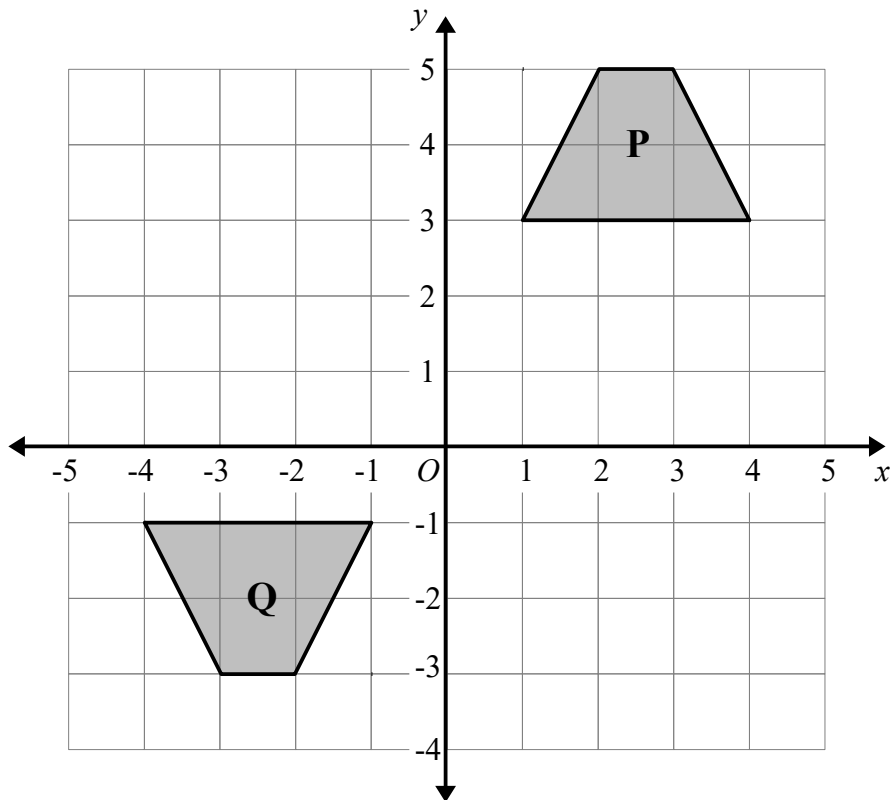
> 100 g of sugar
> 225g of butter
> 350 g of flour
> 280g of mincemeat

Elaine wants to make 24 mince pies.

How much of each ingredient will Elaine need?

sugar …......................... g

butter …......................... g

flour …......................... g

mincemeat …......................... g

(Total for Question 17 is 3 marks)

18

Describe fully the single transformation that maps triangle **P** on triangle **Q**.

…................…………………….......…………………………………………………………….……………

(Total for Question 18 is 2 marks)

19 A circular field has a diameter of 35 metres.
A farmer wants to build a fence around the edge of the field.

Each metre of fence will cost £19.95

Work out the total cost of the fence.

£…..............………………..
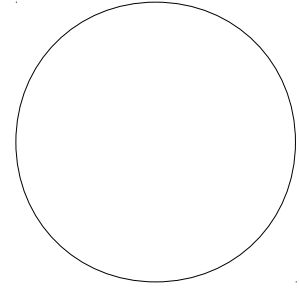
(Total for Question 19 is 3 marks)

20 (a) Simplify $7p^6 \times 2p^{-2}$

…......................……

(1)

(b) Simplify $(3x^5y^2)^4$

…......................……

(2)

(c) $p^2 \times p^5 = p^{11} \times p^y$

Find the value of y

…......................……

(2)

(Total for Question 20 is 5 marks)

21   (a) Find the highest common factor (HCF) of 70 and 56

....
(2)

(b) Find the lowest common multiple (LCM) of 70 and 56

....
(2)

(Total for Question 21 is 4 marks)

22
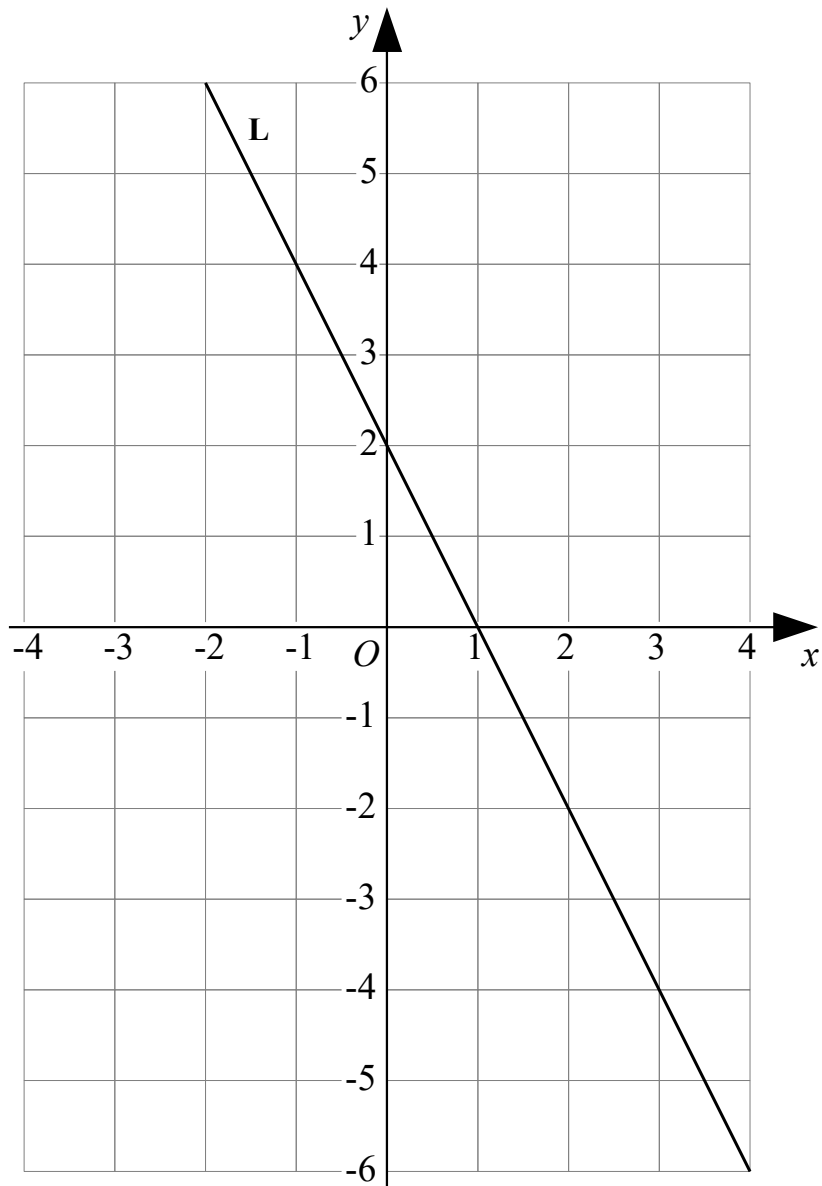
Find the equation of line **L**.

....

(Total for Question 22 is 3 marks)

23 Abbie buys a sofa for £680
She pays a deposit of 15% and the rest of the money in monthly payments of £17.

How many monthly payments will Abbie need to pay?

....

(Total for Question 23 is 3 marks)

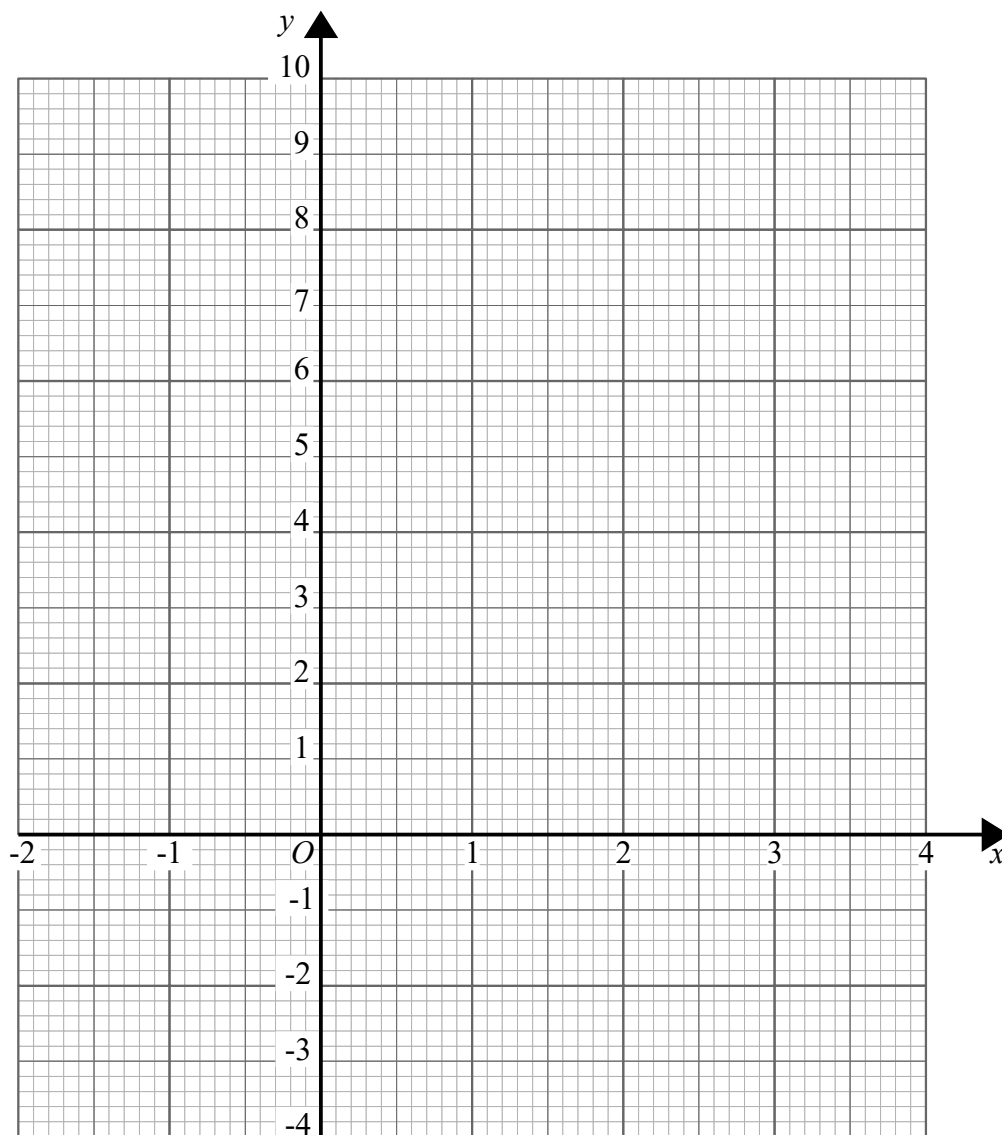**24** There are only green pens, black pens and red pens in a box.

There are five times as many green pens as black pens.
There are half as many red pens as green pens.

Write down the ratio of green pens to black pens to red pens.

....

(Total for Question 24 is 2 marks)

25 Complete the table of values for $y = x^2 - x - 2$

x	-2	-1	0	1	2	3	4
y							

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

(b) Use the graph to find an estimate of the turning point of the graph $y = x^2 - x - 2$

....
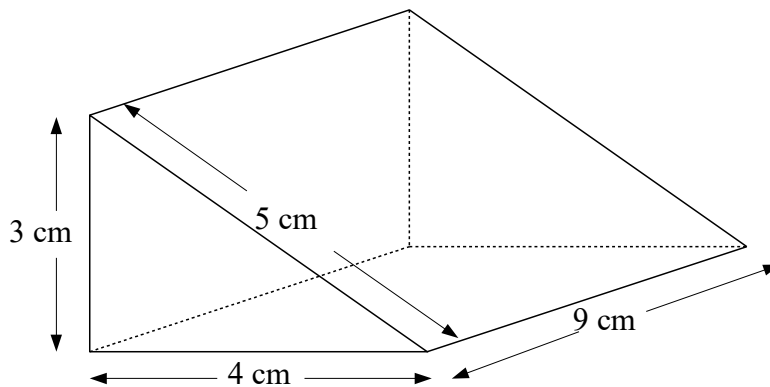
(2)

(Total for Question 25 is 6 marks)

26 In 2000, the world population was 6.1 billion.
In 2020, the world population was 7.8 billion.

Work out the percentage increase in population.
Give your answer correct to 1 decimal place.

….. %

(Total for Question 26 is 3 marks)

27

The diagram shows a triangular prism.
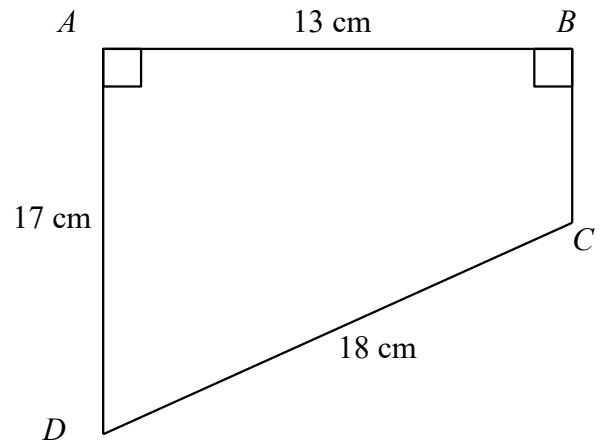The cross-section of the prism is a right angled triangle.

Calculate the volume of the prism.

…...............……………........cm³

(Total for Question 27 is 3 marks)

28 *ABCD* is a trapezium.

Calculate the length of *BC*.
Give your answer correct to 1 decimal place.

A   13 cm   *B*

17 cm

C

18 cm

D

…......................................cm

(Total for Question 28 is 3 marks)