A

AQA

Surname _____

Forename(s) _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

GCSE
MATHEMATICS

F

Foundation Tier   Paper 1   Non-Calculator

8300/1F

Friday 19 May 2023   **Morning**

Time allowed: 1 hour 30 minutes

At the top of the page, write your surname and forename(s), your centre number, your candidate number and add your signature.
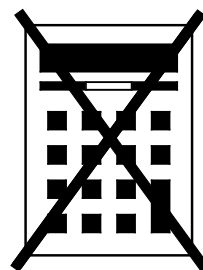
[Turn over]

MATERIALS

For this paper you must have:

- **mathematical instruments**

- **the Formulae Sheet (enclosed).**

You must NOT use a calculator.

INSTRUCTIONS

- **Use black ink or black ball-point pen. Draw diagrams in pencil.**

- **Answer ALL questions.**

- **You must answer the questions in the spaces provided. Do not write on blank pages.**

- **If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).**

- **Do all rough work in this book. Cross through any work you do not want to be marked.**

INFORMATION

- The marks for questions are shown in brackets.

- The maximum mark for this paper is 80.

- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

ADVICE

In all calculations, show clearly how you work out your answer.

DO NOT TURN OVER UNTIL TOLD TO DO SO

0 3

Answer ALL questions in the spaces provided.

1   **Here is a list of numbers.**

        14   9   20   29   3   45   33

1(a)   **Which number in the list is a multiple of 4 ? [1 mark]**

        Answer _____

1(b)   **Which number in the list is a square number? [1 mark]**

        Answer _____

1(c) **Which TWO numbers in the list have a total of 43 ?**
[1 mark]

Answer _____ and _____

1(d) **Work out**

largest number in the list ÷ smallest number in the list
[1 mark]

_____

_____

Answer _____

[Turn over]
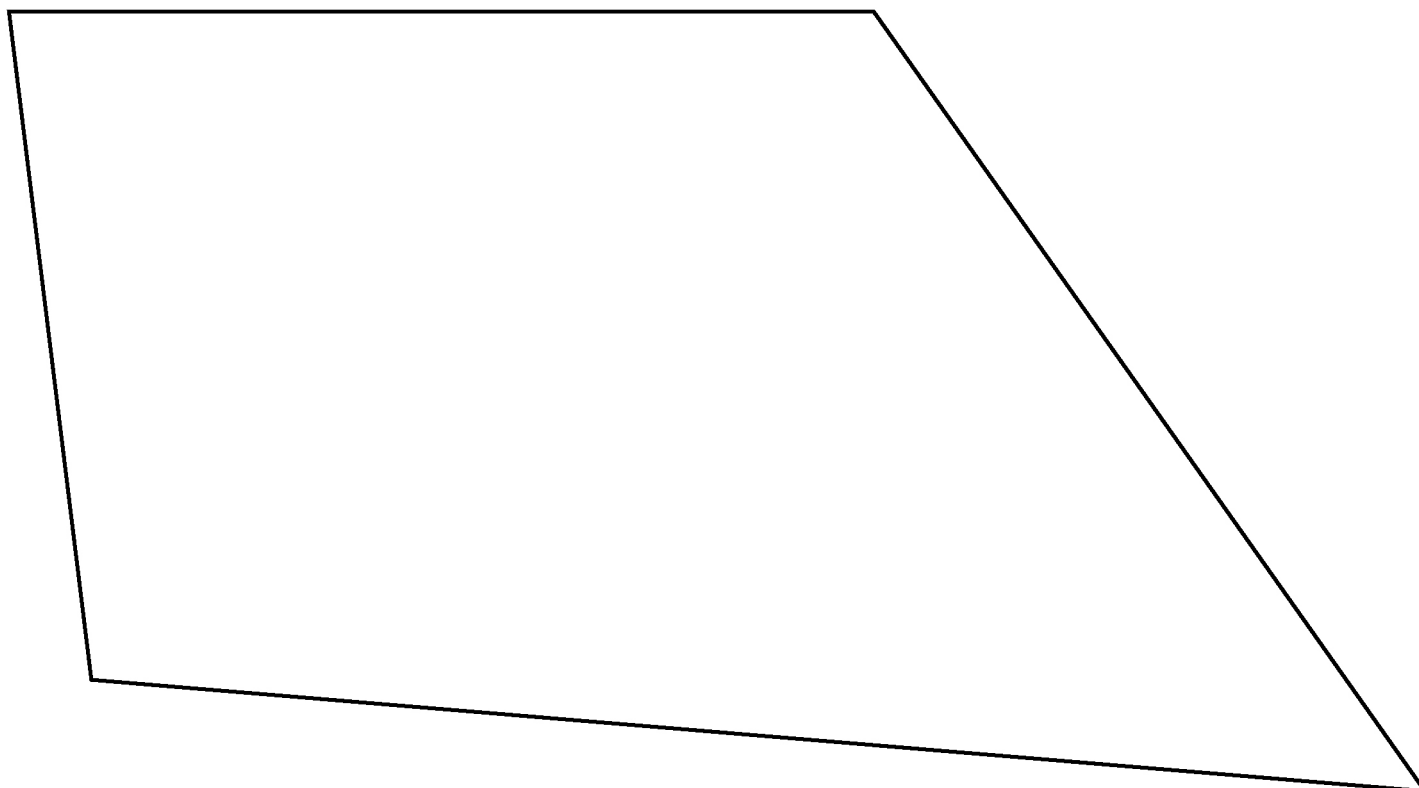
2(a) **Here is a square.**
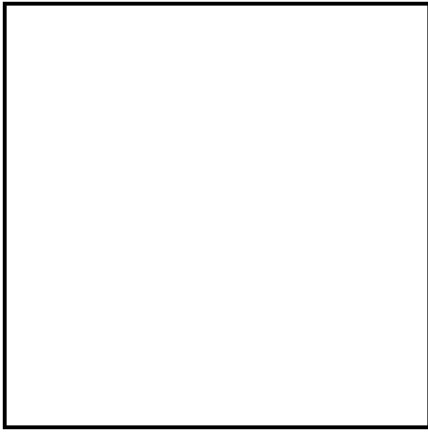
Use a ruler to measure a side length of the square.

Give your answer in MILLIMETRES. [1 mark]

Answer _____ **mm**

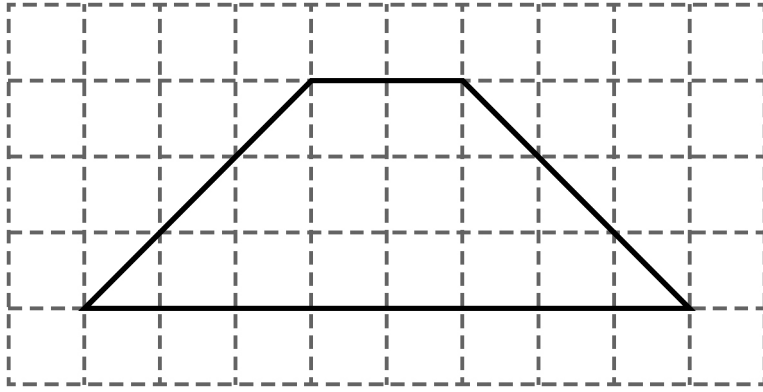**2 (b)** **Here is a quadrilateral.**

Use a protractor to measure the size of the SMALLEST angle. [1 mark]

Answer _____ °

[Turn over]

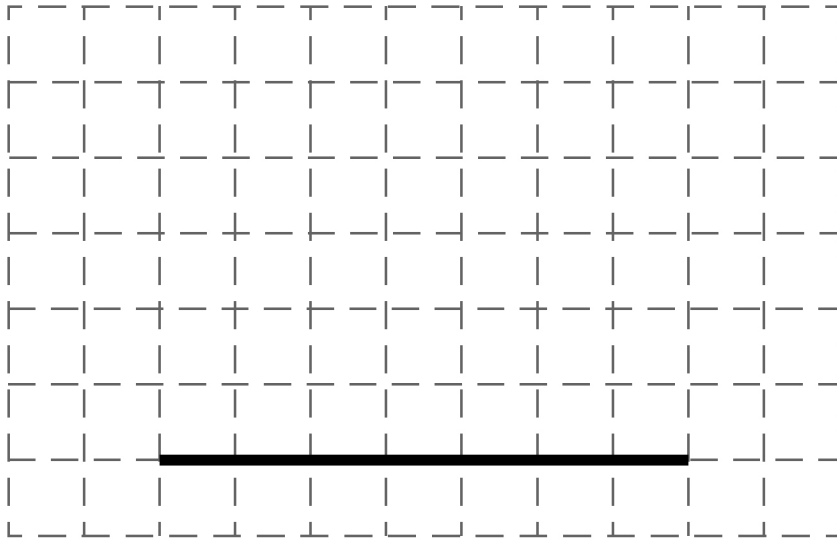**2 (c)**   **A different quadrilateral is drawn on a centimetre grid.**

By counting squares, work out the AREA of the quadrilateral. [1 mark]

Answer _____ **cm^2**

2(d) **One side of a rectangle is drawn on this centimetre grid.**

Complete the rectangle so that it has a PERIMETER of 20 cm [1 mark]

[Turn over]

3 (a) **Work out** $(-4) \times (-3)$ **[1 mark]**

_____

_____

Answer _____

3 (b) **Work out** $6 \times (-5)$ **[1 mark]**

_____

_____

Answer _____

3 (c) **Work out** $(-8)^2$ **[1 mark]**

_____

_____

Answer _____

3 (d) **Work out** 10^3 **[1 mark]**

_____

_____

Answer _____

4 **Write** **18 out of 30** **as a fraction in its simplest form.**
[2 marks]

_____

_____

_____

_____

Answer _____

[Turn over]

5 **At a shop**

the normal price of one pen is 24p

the normal price of one calculator is £7

The shop has these special offers.

PENS

Half the normal price

CALCULATORS

£1.50 less than the normal price

Work out the TOTAL price of 5 pens and
1 calculator using the special offers. [4 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer £ _____

[Turn over]

10

6(a) Write $3\frac{2}{5}$ as an improper fraction. **[1 mark]**

Answer _____

6(b) Write 0.19 as a fraction. **[1 mark]**

Answer _____

7 Misha recorded the main type of weather each day for 55 DAYS.

The pictogram shows the results for rain, snow and cloud.

KEY: ▦ = 4 days

Rain	▦ ▦ ▦ ▦
Snow	▦ ▦ ▯
Cloud	▦ ▦ ▦ ▦ ▯
Sun	
Fog	

Sun was recorded on 1 MORE day than fog.

Complete the pictogram for the 55 days. [4 marks]

[Turn over]

6

8 $T = 5P - W$

8 (a)   **Work out the value of T when $P = 4$ and $W = 2$**
[2 marks]

_____

_____

_____

_____

$T =$ _____

8(b)   **Work out the value of P when $T = -40$ and $W = 10$**
[3 marks]

_____

_____

_____

_____

_____

$P =$ _____

9 Match each box on the left to the box on the right with the same value.

One has been done for you. [3 marks]

$\dfrac{1}{10}$	———————	0.1

	0.05

$\dfrac{1}{2}$		20%

$\dfrac{1}{4}$		$\dfrac{2}{6}$

	0.25

$\dfrac{1}{5}$		$\dfrac{10}{20}$

[Turn over]

$\dfrac{}{8}$

10 **Here are two calculations, A and B.**

A	8 × 3 + 2
B	21 – (15 – 4)

Work out   answer to A × answer to B   [3 marks]

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

11   Convert 7 gallons to litres.

Use   1 gallon = 4.5 litres   [2 marks]

_____

_____

_____

_____

_____

_____

Answer _____ litres

12   The table shows monthly payments for electricity.

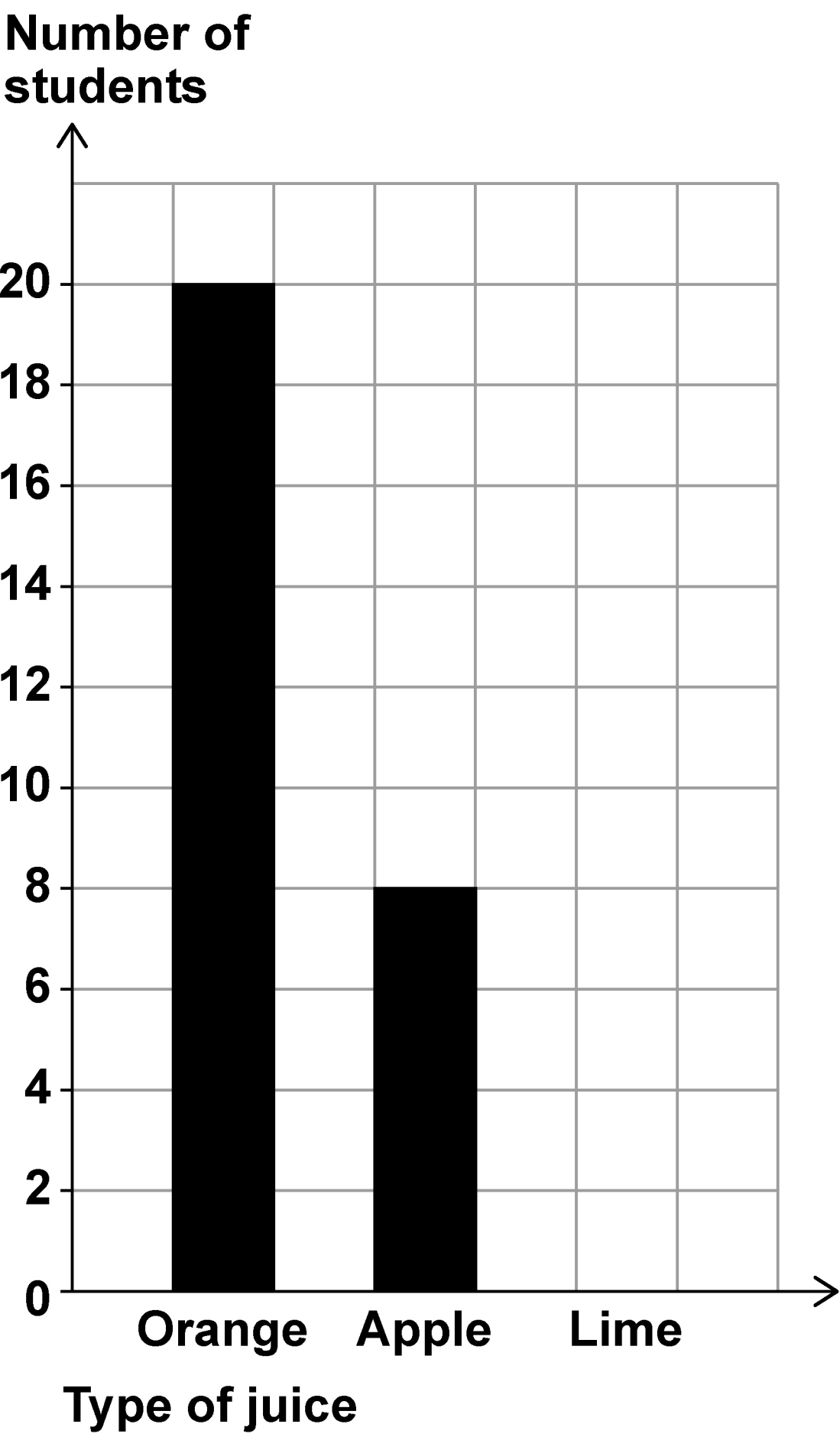| OCTOBER	NOVEMBER
£120	£240

Write down the percentage increase from October to November. [1 mark]

Answer _____ %

[Turn over]

13   Students choose juice with their school meal in the ratio

orange : apple : lime = 5 : 2 : 3

Number of
students

Type of juice

Complete the bar chart. [3 marks]

_____

_____

_____

9

14   Here is some data about people visiting a gym one week.

	Percentage of all visitors	Mean number of hours visiting	Range of number of hours visiting
Members	64	4	6
Guests	36	$2\frac{1}{2}$	8

Compare the data for the members with the data for the guests.

Make THREE comparisons. [3 marks]

Comparison 1 _____

_____

_____

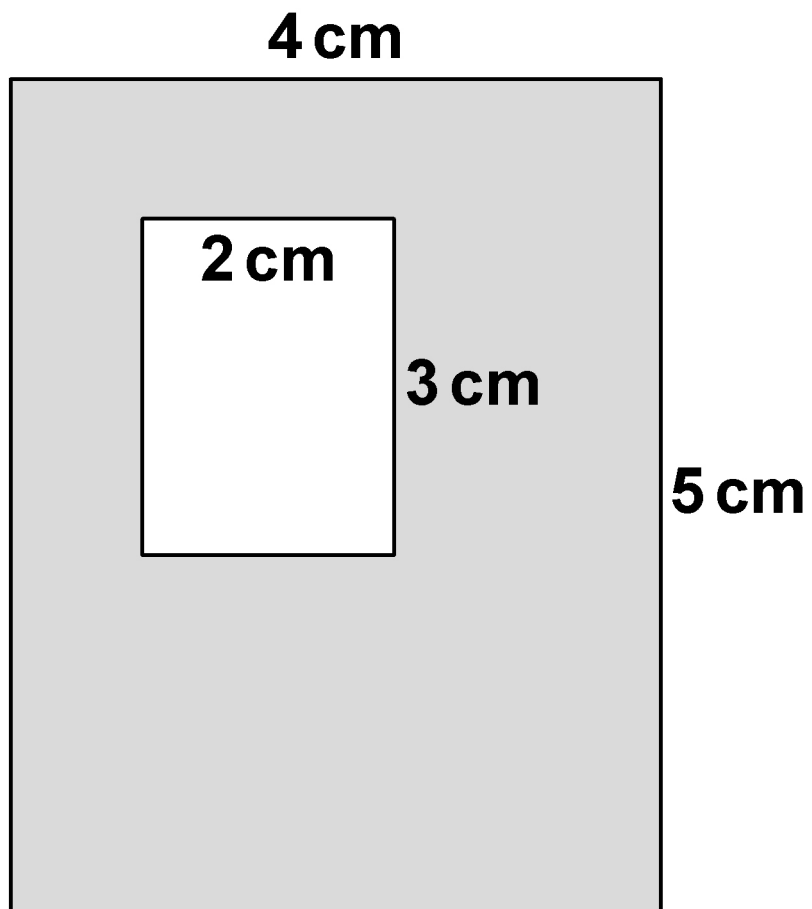_____

Comparison 2 _____

_____

_____

Comparison 3 _____

_____

_____

_____

[Turn over]

15 **A large rectangle has a rectangular hole cut out.**

The diagram is not drawn accurately.

4 cm

2 cm

3 cm

5 cm

Work out the percentage of the large rectangle that is shaded. **[3 marks]**

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____ **%**

16   **Liz travels 18 miles in 20 minutes.**

   Work out her average speed in miles per hour.   [3 marks]

_____

_____

_____
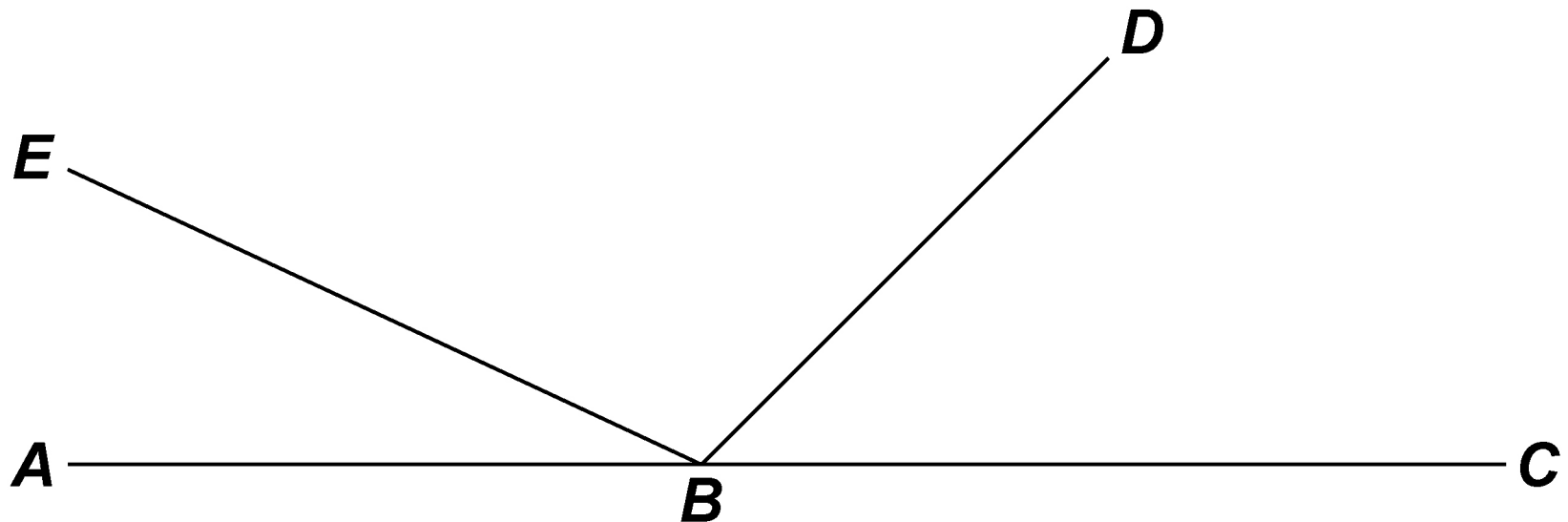
_____

_____

_____

Answer _____ **mph**

[Turn over]

9

17   *ABC*, *BD* and *BE* are straight lines.

The diagram is not drawn accurately.

angle *EBD* = 5 × angle *ABE*

angle *DBC* = 3 × angle *ABE*

Work out the size of angle *EBD*. [3 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____ °

[Turn over]

18   Two prime numbers are multiplied together.

The answer is an EVEN number between 50 and 60

Complete the calculation. [3 marks]

$$\boxed{} \times \boxed{} = \boxed{}$$

_____

_____

_____

_____

_____

_____

19   **Andrew and Bruce share some money in the ratio   5 : 6**

Bruce gets £96

Andrew gives $\frac{1}{4}$ of his share to Carl.

Bruce gives $\frac{2}{3}$ of his share to Carl.
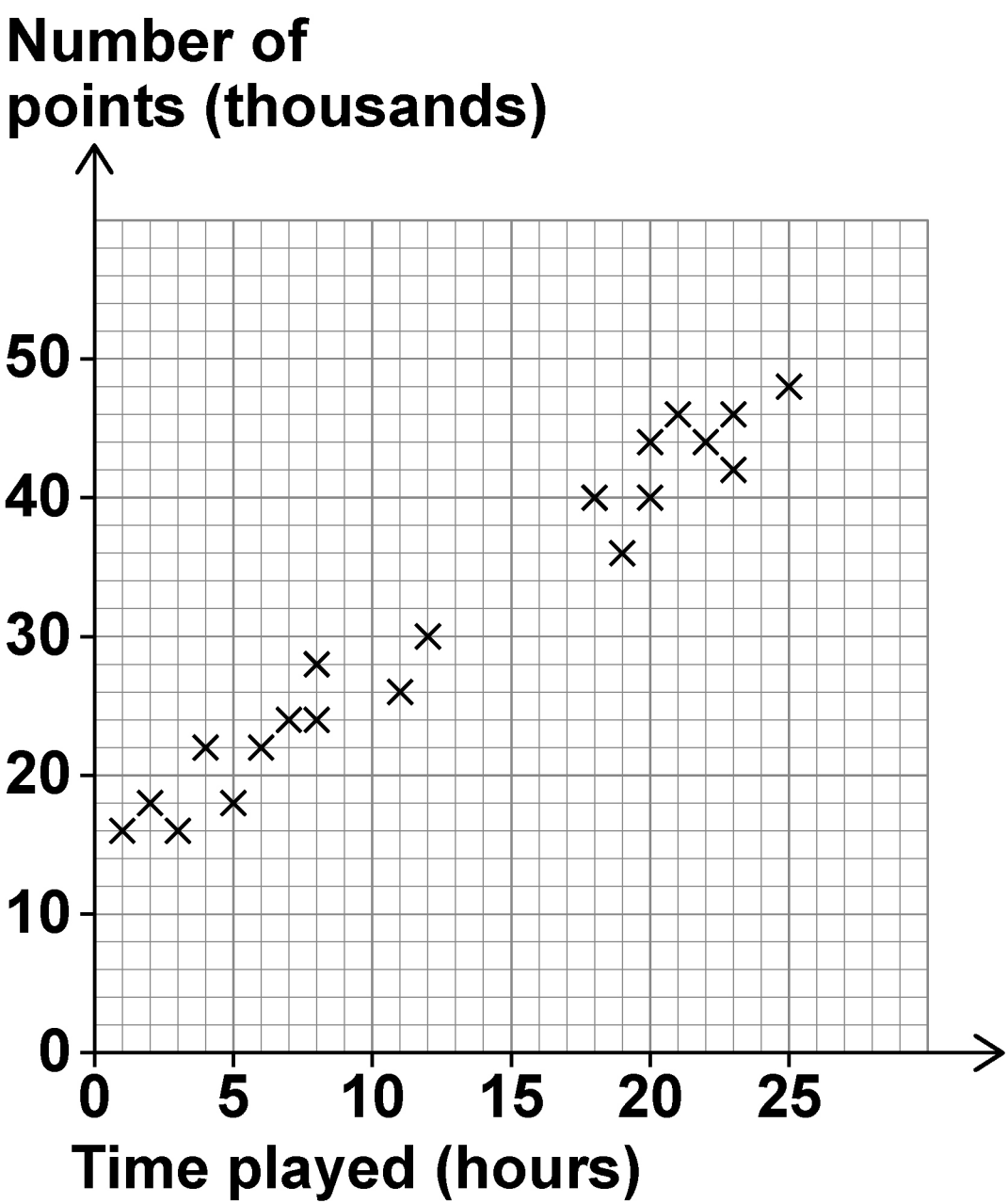
How much money does Carl receive? [4 marks]

_____

_____

_____

_____

_____

_____

_____

_____

Answer £ _____

[Turn over]

10

20   **Players score points in a game.**

The scatter graph shows the time played and the points scored by some players.

**Number of
points (thousands)**

Time played (hours)

20 (a)   **Circle the strength and type of correlation shown.**
[1 mark]

weak positive   **strong positive**

weak negative   **strong negative**

20 (b) Players get one extra life for every 2000 points they score.

Jonah plays the game for 15 hours.

Use a line of best fit to estimate the number of extra lives he gets. [3 marks]

_____

_____

_____

_____

Answer _____

[Turn over]

21 $2^a \times 3 \times 5^2 = 600$

Work out the value of a.

You MUST show your working. [3 marks]

_____

_____

_____

_____

_____

_____

_____

_____

$a =$ _____

22 **Expand and simplify fully** $5(3x + 4) - 2(x - 1)$ **[2 marks]**

_____

_____

_____

_____

_____

_____

_____

Answer _____

[Turn over]

9

23 **Erika tries to sketch the graph** $y = \dfrac{1}{x}$ **with** $x \neq 0$
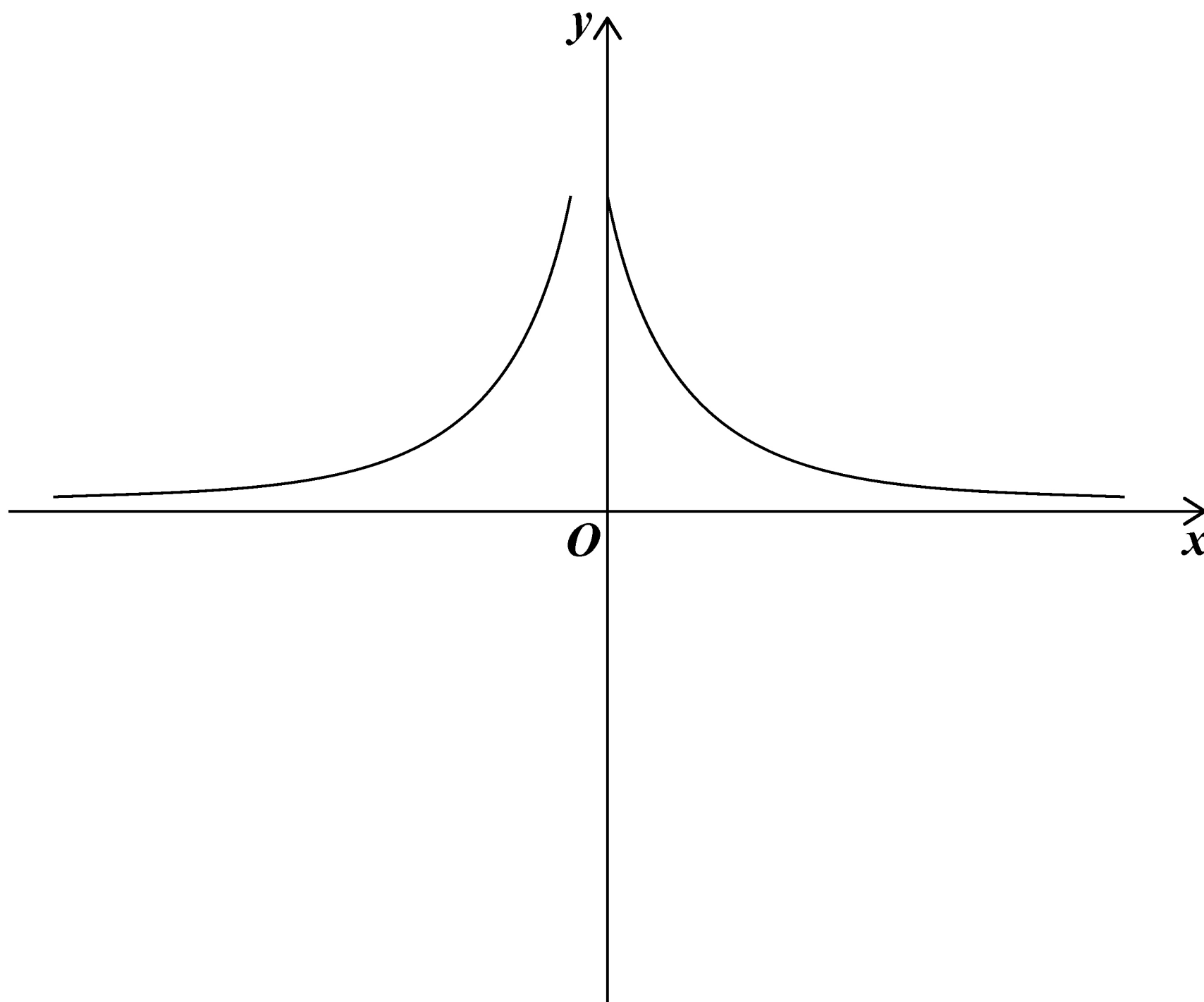
Make TWO different criticisms of her sketch. [2 marks]

Criticism 1 _____

_____

_____

_____

Criticism 2 _____

_____

_____

_____

[Turn over]

24 Sunita is x years old.

Beth is one year younger than Sunita.

Joel is double Sunita's age.

The mean of their ages is 5

How old is JOEL? [5 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

[Turn over]

$$\frac{}{7}$$

25 **Work out** $2\frac{1}{3} \div \frac{4}{5}$

Give your answer as a mixed number. **[4 marks]**

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

END OF QUESTIONS

$$\frac{\quad}{4}$$

Additional page, if required.

Write the question numbers in the left-hand margin.

Additional page, if required.

Write the question numbers in the left-hand margin.

BLANK PAGE