



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.**

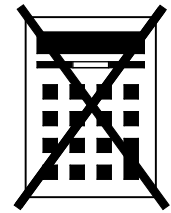
**[Turn over]**



## **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**



**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]**

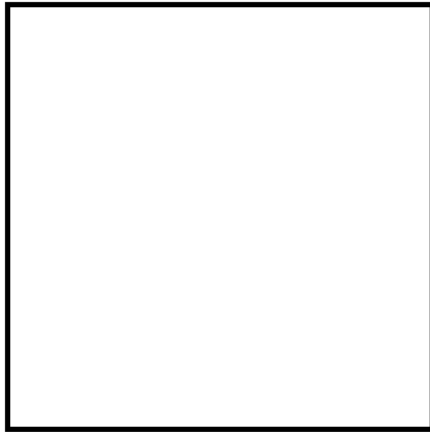
\_\_\_\_\_  
\_\_\_\_\_

**Answer** \_\_\_\_\_

**[Turn over]**



**2(a) Here is a square.**

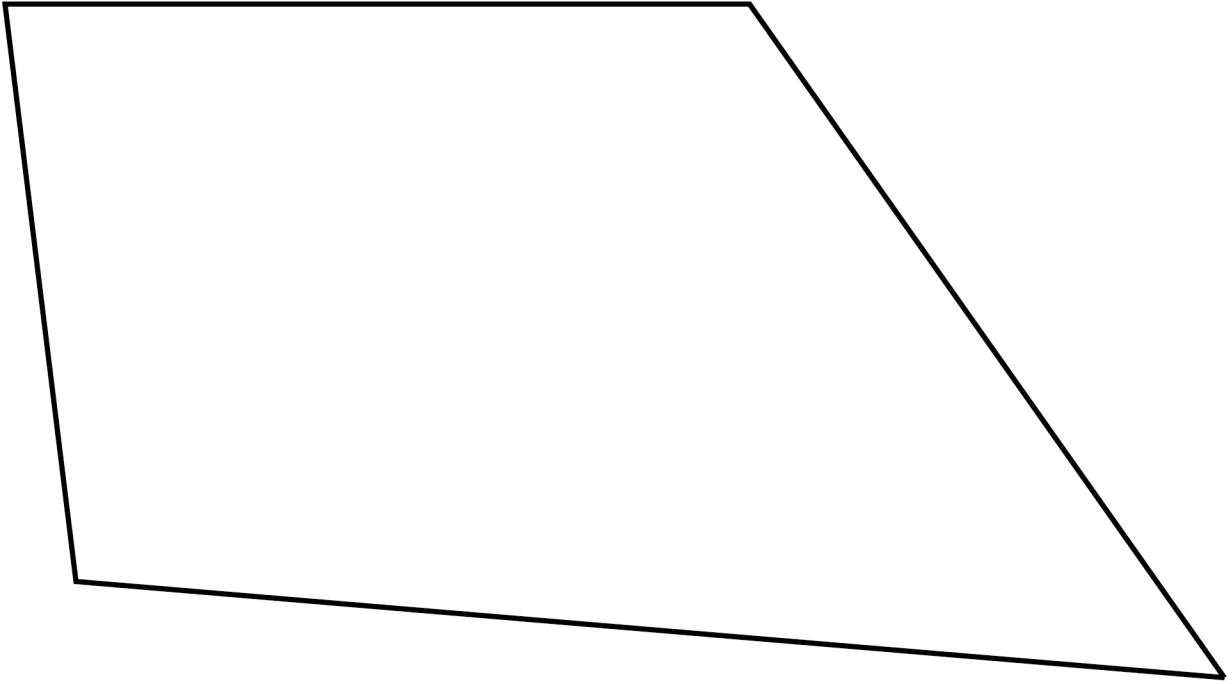


**Use a ruler to measure a side length of the square.**

**Give your answer in  
MILLIMETRES. [1 mark]**

**Answer** \_\_\_\_\_ **mm**

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



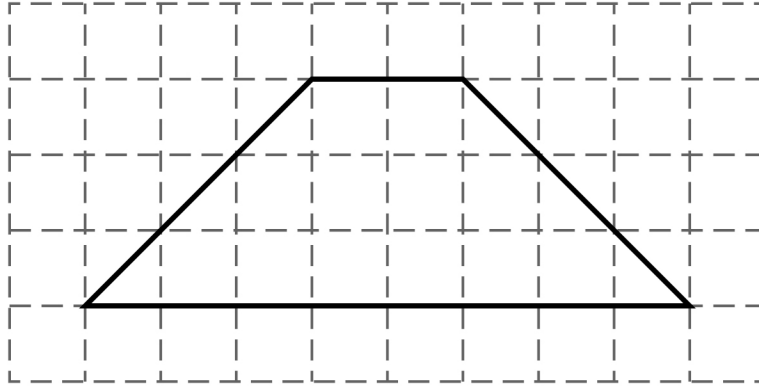
**Use a protractor to measure the  
size of the SMALLEST angle.  
[1 mark]**

**Answer** \_\_\_\_\_ °

**[Turn over]**



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



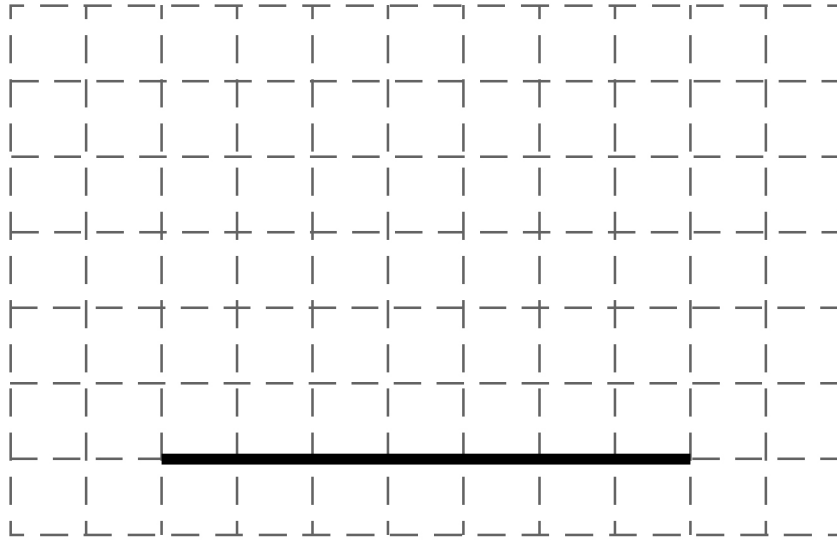
**By counting squares, work out the AREA of the quadrilateral.**

**[1 mark]**

**Answer** \_\_\_\_\_ **cm<sup>2</sup>**



- 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]**

<b>4</b>

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

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**Answer** \_\_\_\_\_

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

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**Answer** \_\_\_\_\_

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

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**Answer** \_\_\_\_\_



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

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**Answer** \_\_\_\_\_

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

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**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]**



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 \_\_\_\_\_



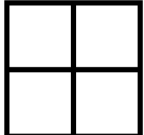
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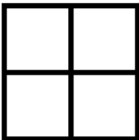
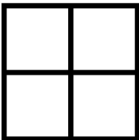
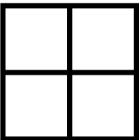
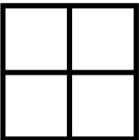
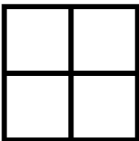
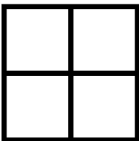
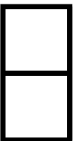
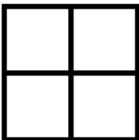
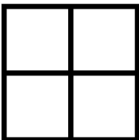
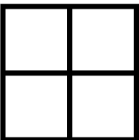
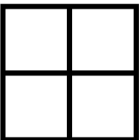
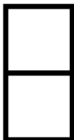
**[Turn over]**



- 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

<b>Rain</b>	   
<b>Snow</b>	  
<b>Cloud</b>	    
<b>Sun</b>	
<b>Fog</b>	



**Sun was recorded on 1 MORE day than fog.**

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

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**[Turn over]**

<b>6</b>



**8**       **$T = 5P - W$**

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

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**$T =$**  

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

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 $P =$  

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**[Turn over]**

- 9 On the opposite page, match each box on the left to the box on the right with the same value.**

**One has been done for you.  
[3 marks]**



21

$$\frac{1}{10}$$

$$0.1$$

$$0.05$$

$$\frac{1}{2}$$

$$20\%$$

$$\frac{1}{4}$$

$$\frac{2}{6}$$

$$\frac{1}{5}$$

$$0.25$$

$$\frac{10}{20}$$

[Turn over]

$$\frac{\quad}{8}$$



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

<b>A</b>	<b><math>8 \times 3 + 2</math></b>
<b>B</b>	<b><math>21 - (15 - 4)</math></b>

**Work out answer to A  $\times$  answer to B**  
**[3 marks]**

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**Answer** \_\_\_\_\_



**11 Convert 7 gallons to litres.**

**Use 1 gallon = 4.5 litres [2 marks]**

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**Answer** \_\_\_\_\_ **litres**

**[Turn over]**



- 12 The table shows monthly payments for electricity.**

<b>OCTOBER</b>	<b>NOVEMBER</b>
<b>£120</b>	<b>£240</b>

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

**Answer** \_\_\_\_\_ %





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**[Turn over]**



- 13 Students choose juice with their school meal in the ratio**

**orange : apple : lime = 5 : 2 : 3**

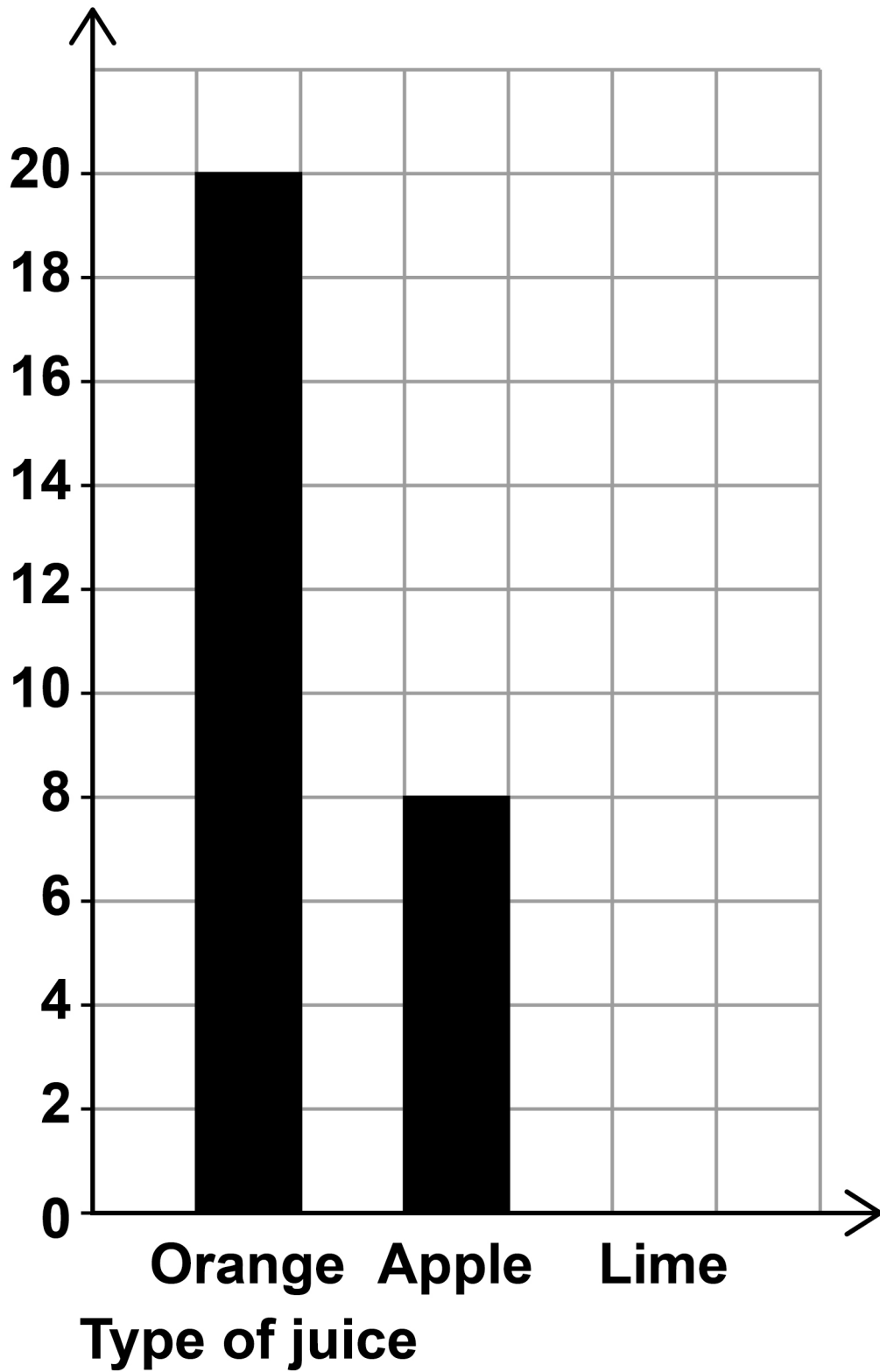
**On the opposite page, complete the bar chart. [3 marks]**

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**Number of  
students**



**[Turn over]**



- 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
<b>Members</b>	<b>64</b>	<b>4</b>	<b>6</b>
<b>Guests</b>	<b>36</b>	<b><math>2\frac{1}{2}</math></b>	<b>8</b>

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

**Make THREE comparisons. [3 marks]**

**Comparison 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Comparison 2** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Comparison 3** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

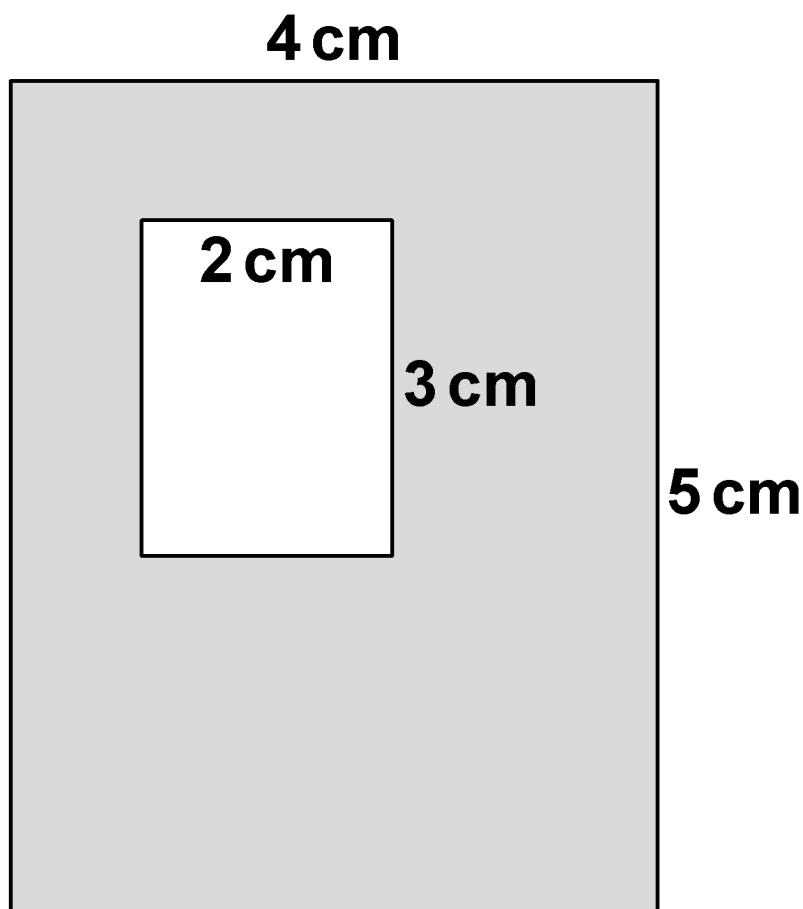
\_\_\_\_\_

**[Turn over]**



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

The diagram is not drawn accurately.



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

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**Answer** \_\_\_\_\_ **%**

**[Turn over]**



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

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

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**Answer** \_\_\_\_\_ **mph**

9





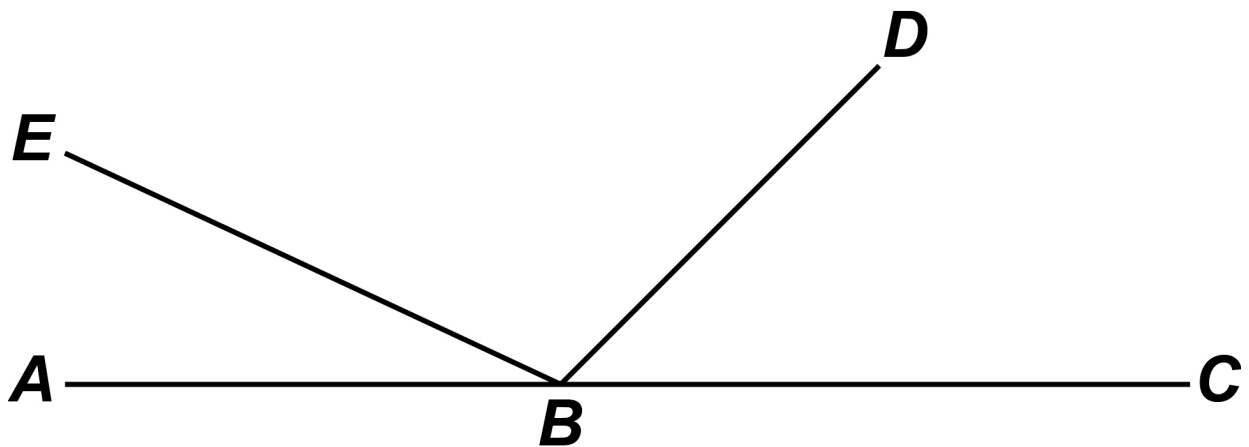
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**[Turn over]**



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

The diagram is not drawn accurately.



angle *EBD* =  $5 \times$  angle *ABE*

angle *DBC* =  $3 \times$  angle *ABE*

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

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**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]

$$\square \times \square = \square$$

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**[Turn over]**



- 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]**

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Answer £ 

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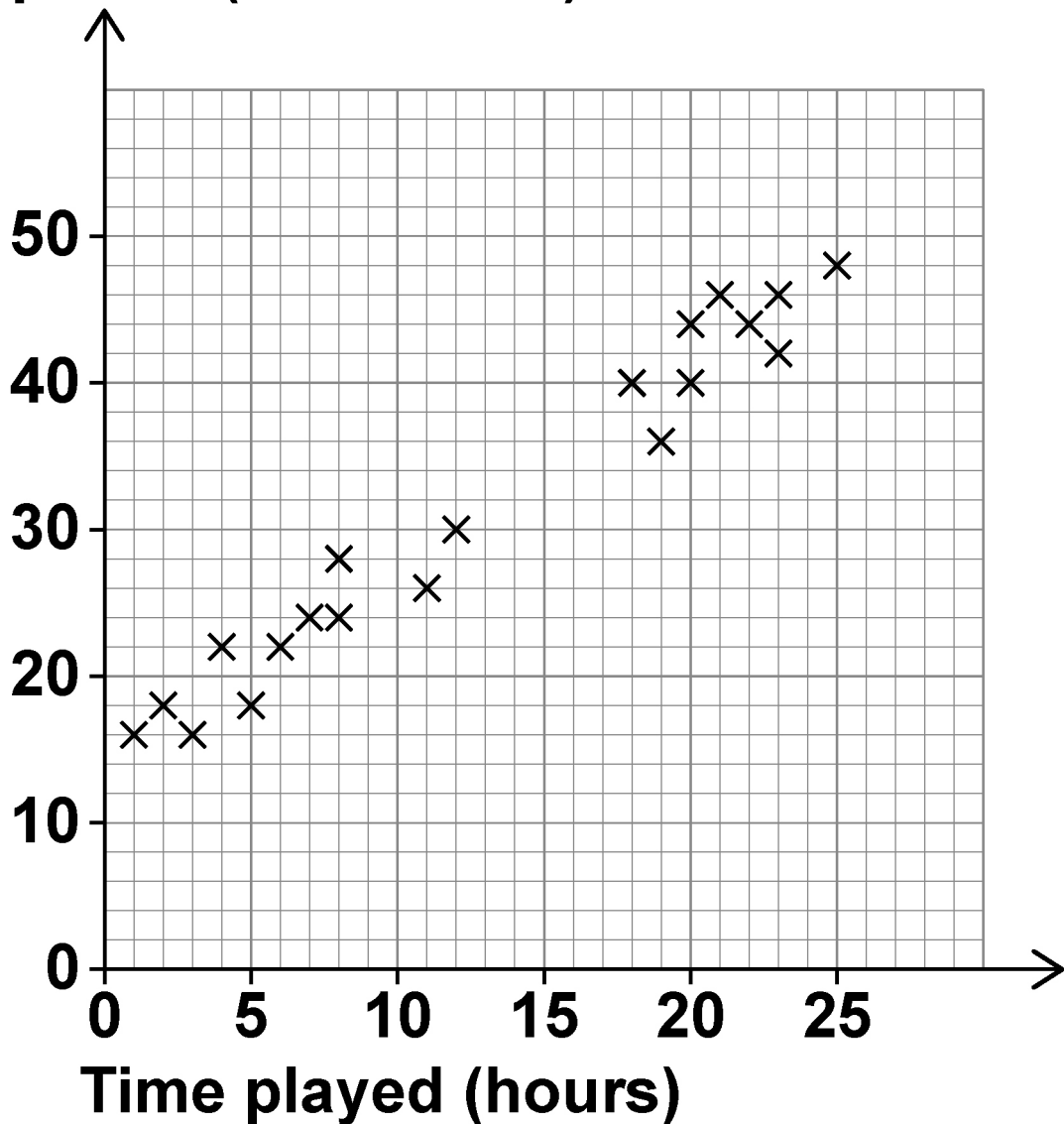
[Turn over]

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)





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

**weak positive**

**strong positive**

**weak negative**

**strong negative**

**[Turn over]**

**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, on page 40, to estimate the number of extra lives he gets. [3 marks]**

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**Answer** \_\_\_\_\_

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

Work out the value of  $a$ .

You **MUST** show your working.  
[3 marks]

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$a =$  \_\_\_\_\_

[Turn over]



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

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**Answer** \_\_\_\_\_

9

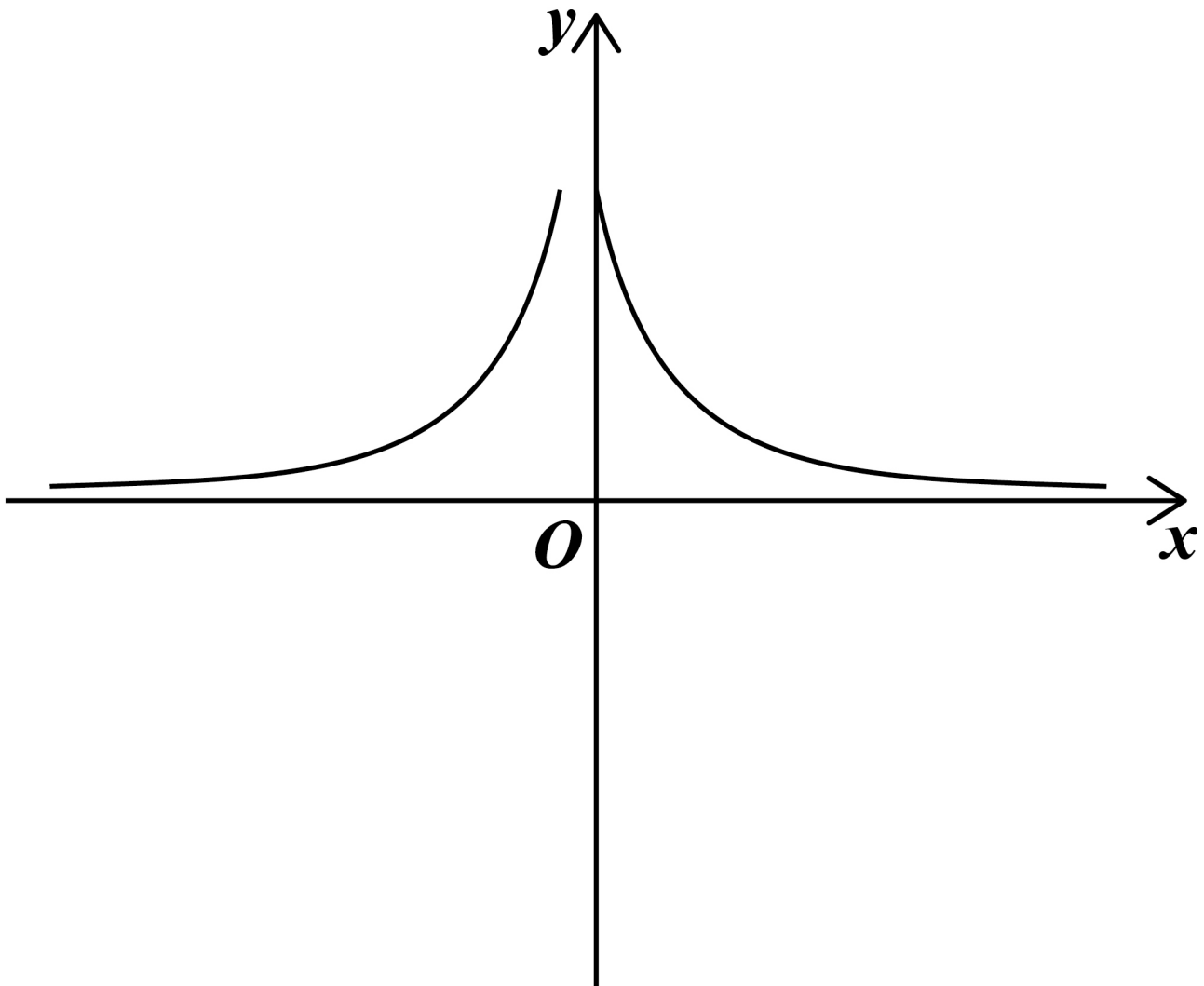


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**[Turn over]**



23 Erika tries to sketch the graph  $y = \frac{1}{x}$   
with  $x \neq 0$



**Make TWO different criticisms of her sketch. [2 marks]**

**Criticism 1** \_\_\_\_\_

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**Criticism 2** \_\_\_\_\_

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**[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]**

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**[Turn over]**

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

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

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**Answer** \_\_\_\_\_

**END OF QUESTIONS**

<b>4</b>



**Additional page, if required.**

**Write the question numbers in the left-hand margin.**

[illegible]

**Additional page, if required.**

**Write the question numbers in the left-hand margin.**

[illegible]

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For Examiner's Use	
Pages	Mark
4–5	
6–9	
10–13	
14–17	
18–21	
22–27	
28–32	
34–39	
40–44	
46–49	
50–51	
<b>TOTAL</b>	

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