



**Surname** \_\_\_\_\_

**Other Names** \_\_\_\_\_

**Centre Number** \_\_\_\_\_

**Candidate Number** \_\_\_\_\_

**Candidate Signature** \_\_\_\_\_

**I declare this is my own work.**

**GCSE**

**MATHEMATICS**

**F**

**Foundation Tier Paper 1 Non-Calculator**

**8300/1F**

**Tuesday 19 May 2020 Morning**

**Time allowed: 1 hour 30 minutes**

**At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.**

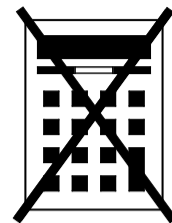
**[Turn over]**



**For this paper you must have:**

- **mathematical instruments.**

**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 are some numbers.**

**5 5 8 13 14 15 17**

**Circle the range. [1 mark]**

**5 11 12 13**

**2 Circle the value of the digit 5 in 256 934 [1 mark]**

**5000 500 000 50 50 000**



**3 Work out  $-2 - 5$**

**Circle your answer. [1 mark]**

**-7**

**-3**

**3**

**7**

**4 What is 680 millimetres in centimetres?**

**Circle your answer. [1 mark]**

**0.68 cm**

**6.8 cm**

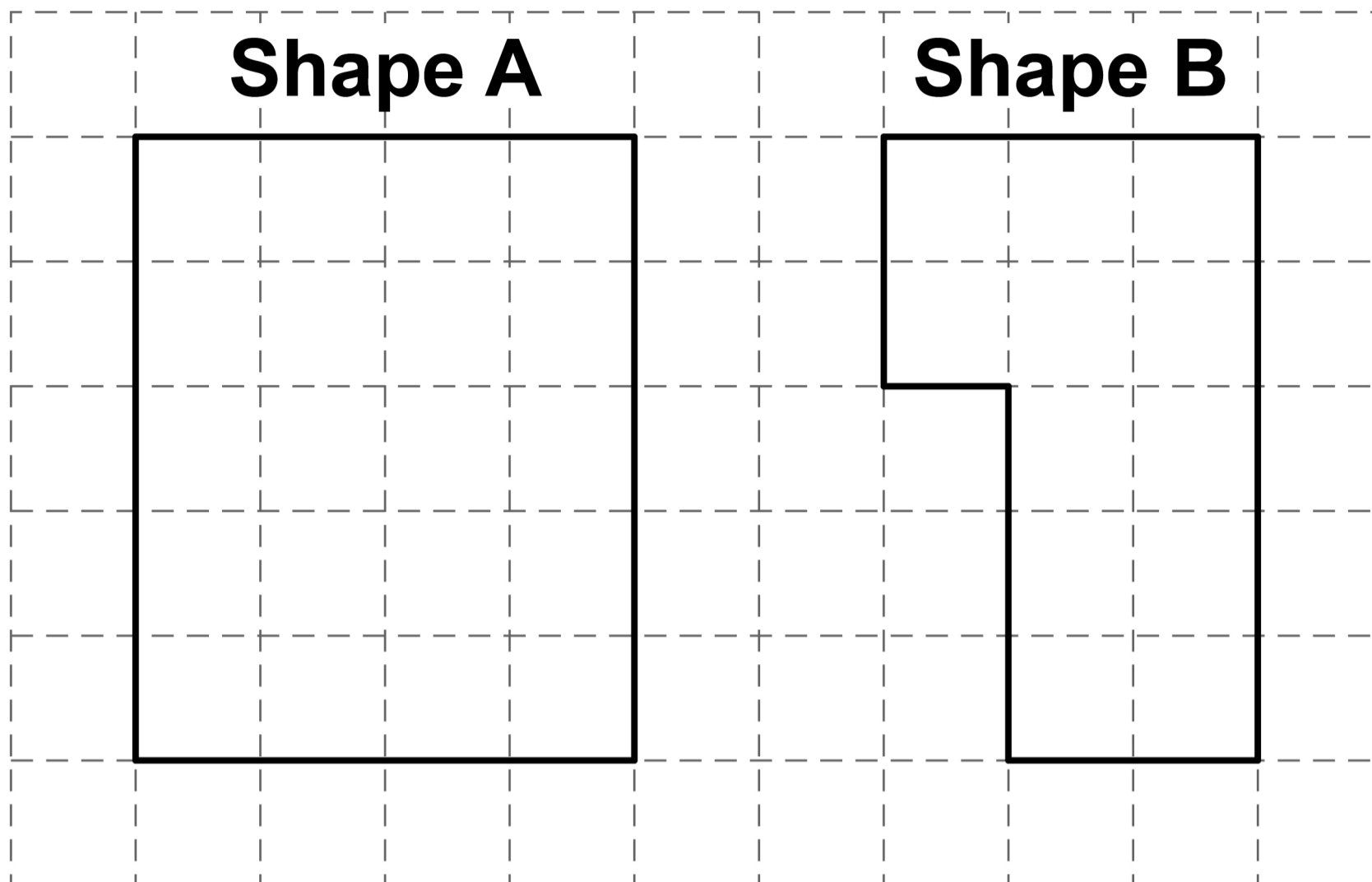
**68 cm**

**6800 cm**

**[Turn over]**



5



**Work out**  
**area of Shape A : area of Shape B**

**Give your answer in its simplest form. [2 marks]**

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



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**[Turn over]**



**6 (a) Samir and Dan run a race.**

**Samir finishes in  $2\frac{1}{2}$  minutes.**

**Dan finishes in 130 seconds.**

**Complete the following sentence.  
[2 marks]**

\_\_\_\_\_ **wins by**  
\_\_\_\_\_ **seconds.**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**6 (b) Alice does a sponsored walk.**

**She starts from home on Monday  
at 8 am**

**She arrives back home  
55 hours later.**

**Work out when she arrives back  
home. [2 marks]**

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**Day** \_\_\_\_\_

**Time** \_\_\_\_\_

**[Turn over]**



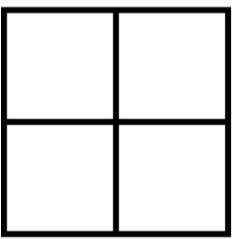
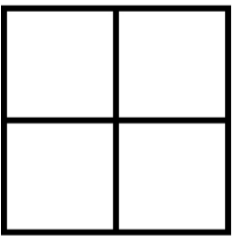
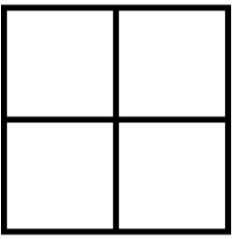
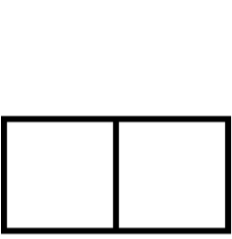

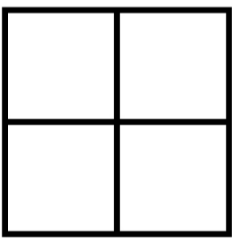
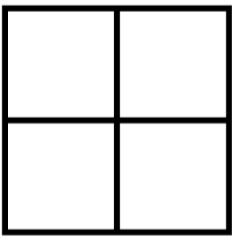
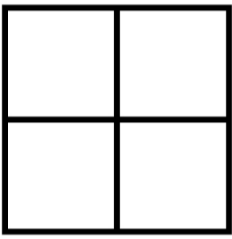
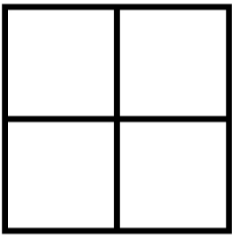
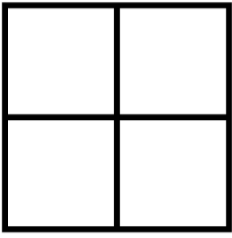
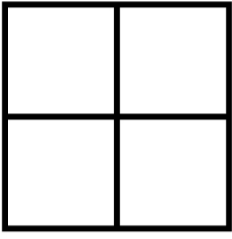
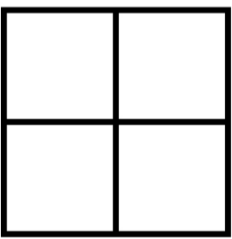
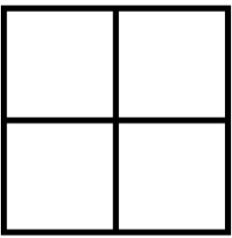
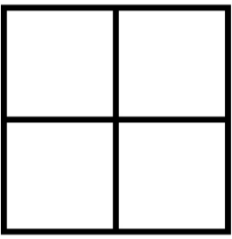
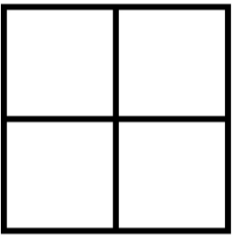


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**8 Here is some information, by ticket type, about the number of people visiting a cinema one week.**

<b>Adults</b>	    
<b>Students</b>	     
<b>Children</b>	   

**12**

**KEY:**  **represents 40 people**



**8 (a) How many children visited the cinema? [1 mark]**

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

**8 (b) How many MORE students than adults visited the cinema? [2 marks]**

**13**

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

**[Turn over]**



**8 (c) A bar chart, on the opposite page, is drawn to show the number of people visiting the cinema one month.**

<b>Ticket type</b>	<b>Number of people</b>
<b>Adults</b>	<b>1600</b>
<b>Students</b>	<b>3000</b>
<b>Children</b>	<b>1800</b>

**Give ONE criticism of the bar chart.  
[1 mark]**

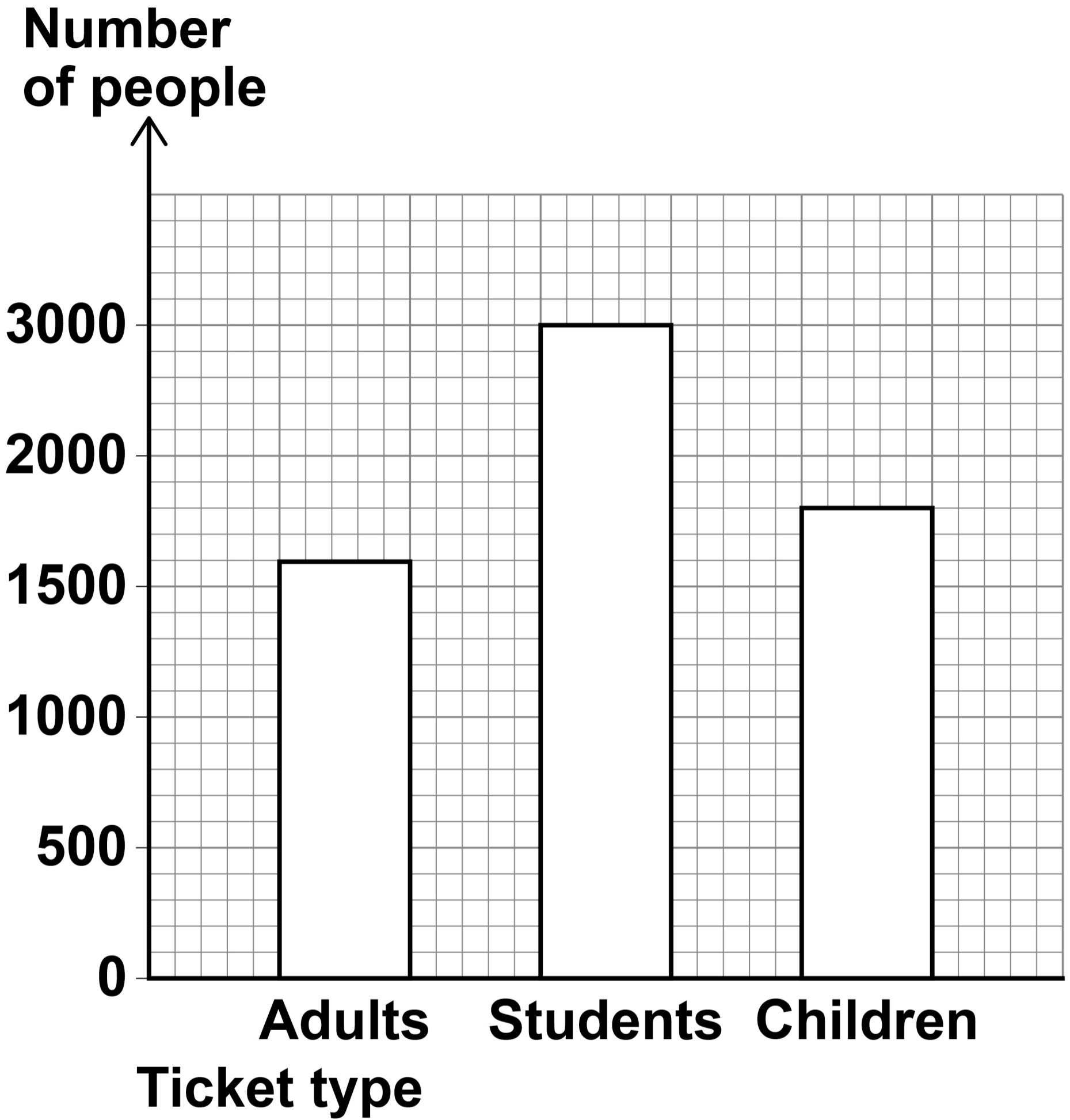
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### People visiting the cinema



4

[Turn over]



**9 Harry will pay income tax if he earns more than £12 500 in a year.**

**After 8 months he has earned a TOTAL of £7600**

**For the rest of the year he earns £1200 each month.**

**Will he pay income tax?**

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

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**[Turn over]**



**10**  $x$  is a 2-digit whole number.

**How many digits does the number  $10x$  have?**

**Circle your answer. [1 mark]**

**cannot tell**

**2**

**3**

**4**



**11 (a) Circle the answer to  $50 \times 0.2$   
[1 mark]**

1

10

100

1000

**11 (b) Work out  $3.65 \div 5$**

**Give your answer as a decimal.  
[2 marks]**

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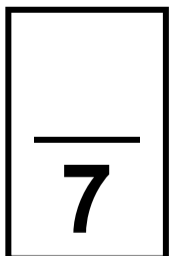
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**Answer** \_\_\_\_\_

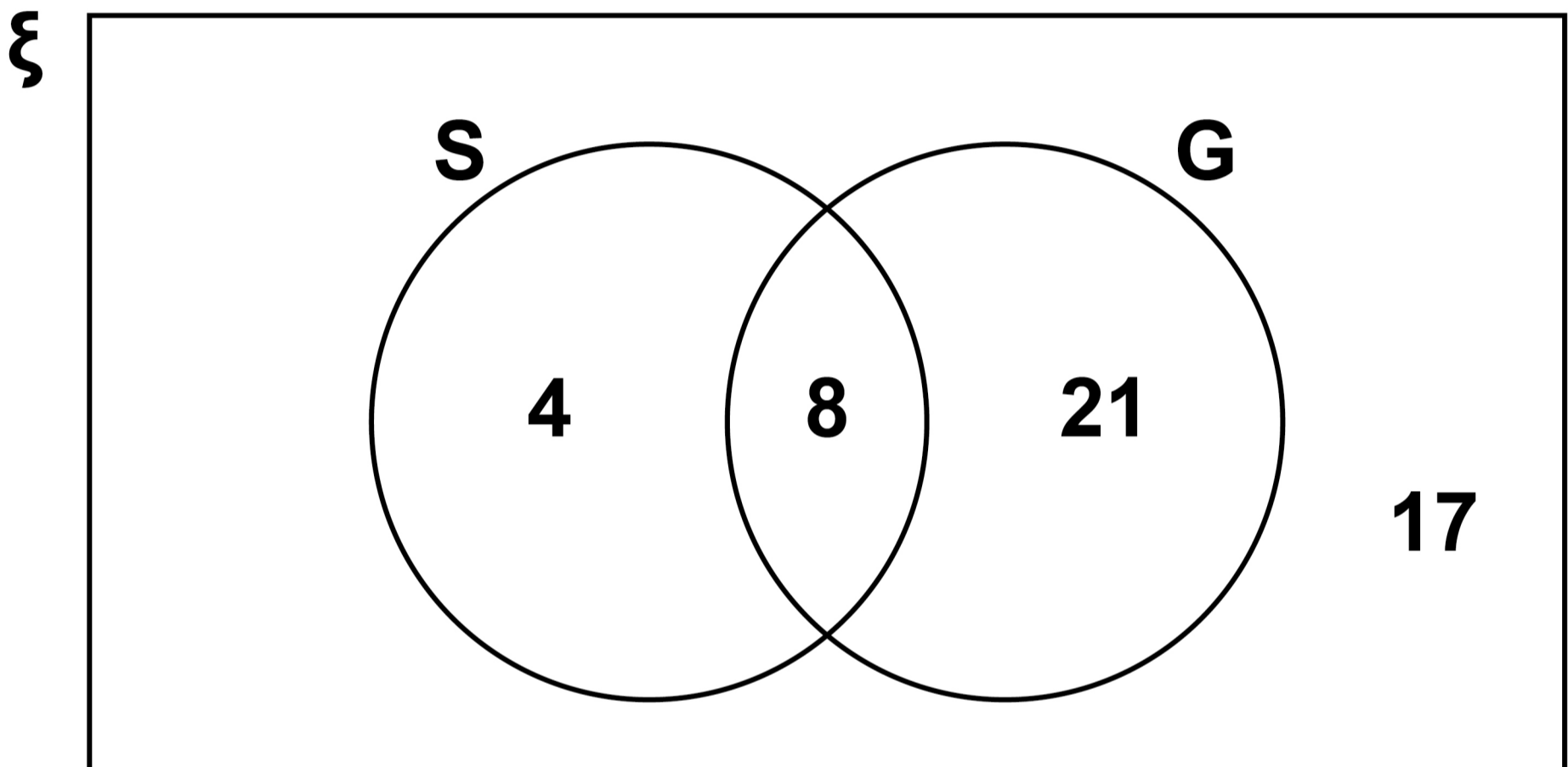
**[Turn over]**



- 12** The Venn diagram shows information about 50 people who are in bands.

**S = singers**

**G = guitar players**



- 12 (a)** How many of the people are guitar players? [1 mark]

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



**12 (b) How many of the people are singers but NOT guitar players?  
[1 mark]**

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

**12 (c) One of the people is chosen at random.**

**Write down the probability that the person is**

**NOT a singer**

**and**

**NOT a guitar player.**

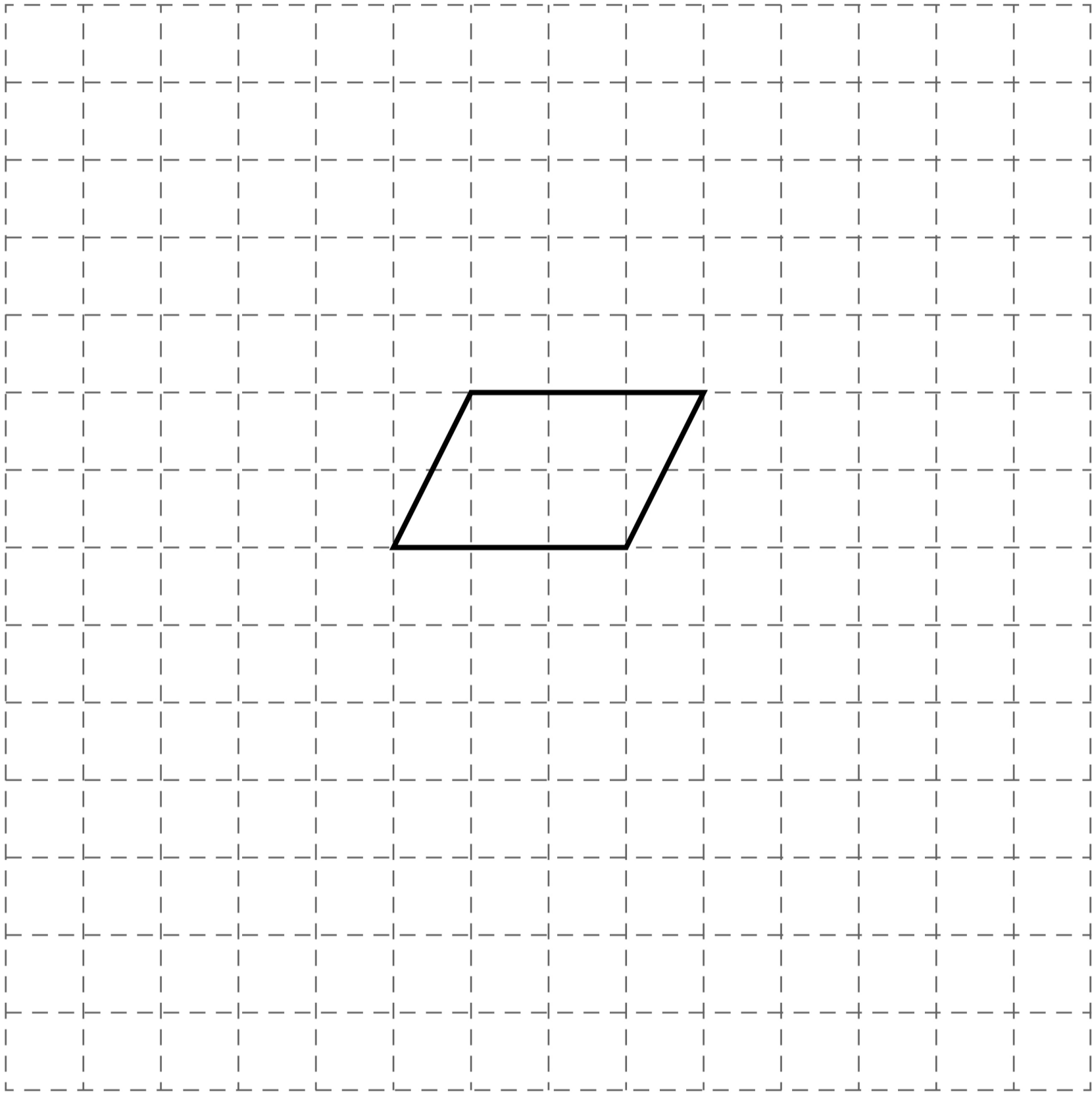
**[1 mark]**

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

**[Turn over]**



**13 Here is a parallelogram.**



**The parallelogram is translated 4 squares to the left and 3 squares up.**

**Draw the translated parallelogram.  
[2 marks]**

5



**14 (a) Solve  $6x - 11 = 13$  [2 marks]**

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**$x =$**  \_\_\_\_\_

**14 (b) Simplify fully  $(2 \times 4a) + 9 + \frac{15a}{3} - 7$   
[3 marks]**

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

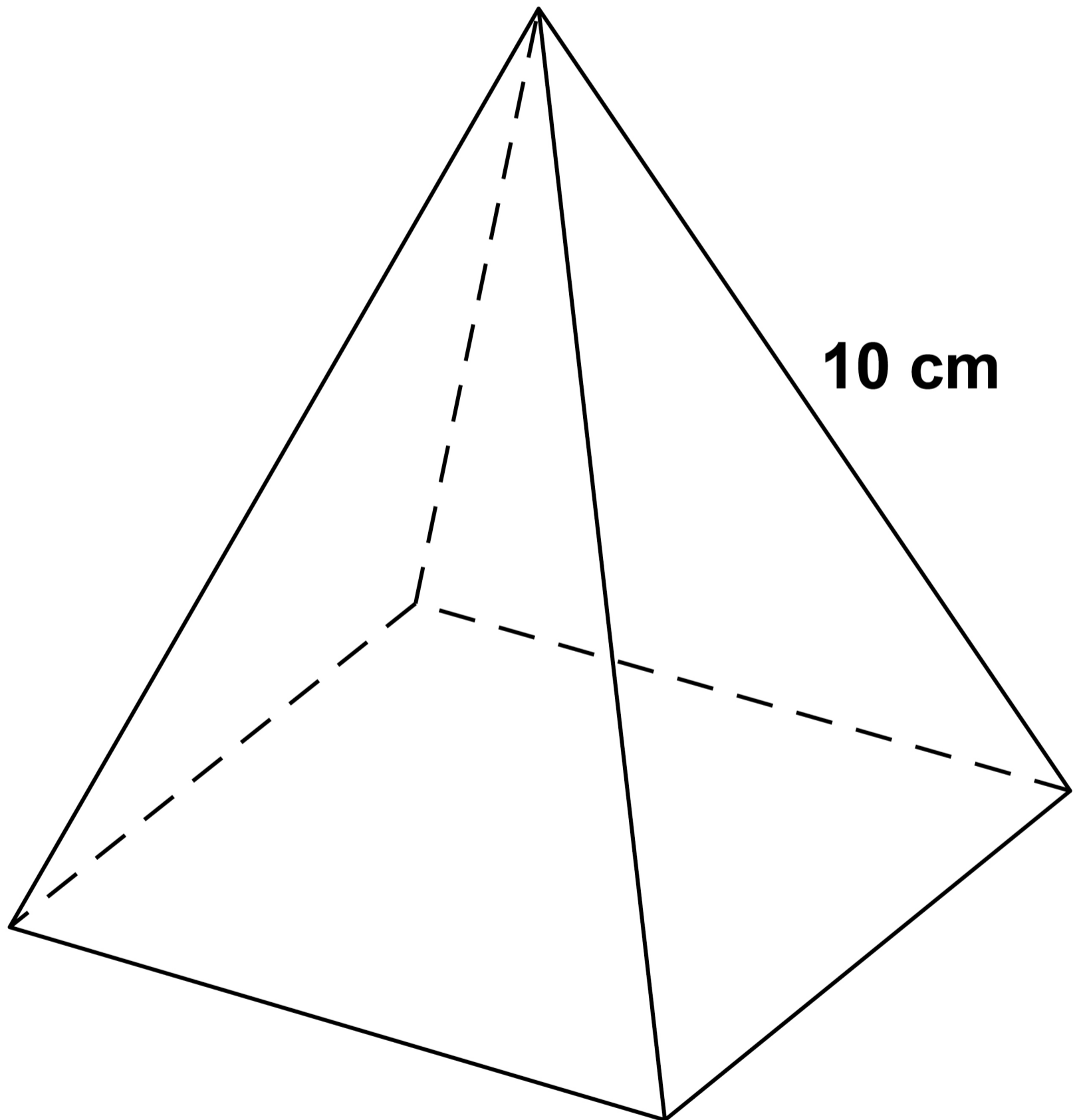
**[Turn over]**



**15 A pyramid has a square base.**

**Each of the four sloping edges has length 10 cm**

**The diagram is not drawn accurately.**







- 16** The table shows information about how 150 students travel to school.

	Walk	Bus	Car	
Girls	22	33	17	Total = 72
Boys	24	41	13	Total = 78

- 16 (a)** What fraction of the **GIRLS** walk to school?

**Give your answer in its simplest form. [2 marks]**

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



**16 (b) One of the BOYS is chosen at random.**

**What is the probability that the boy travels to school by bus? [1 mark]**

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

**16 (c) What percentage of the 150 STUDENTS travel to school by car? [2 marks]**

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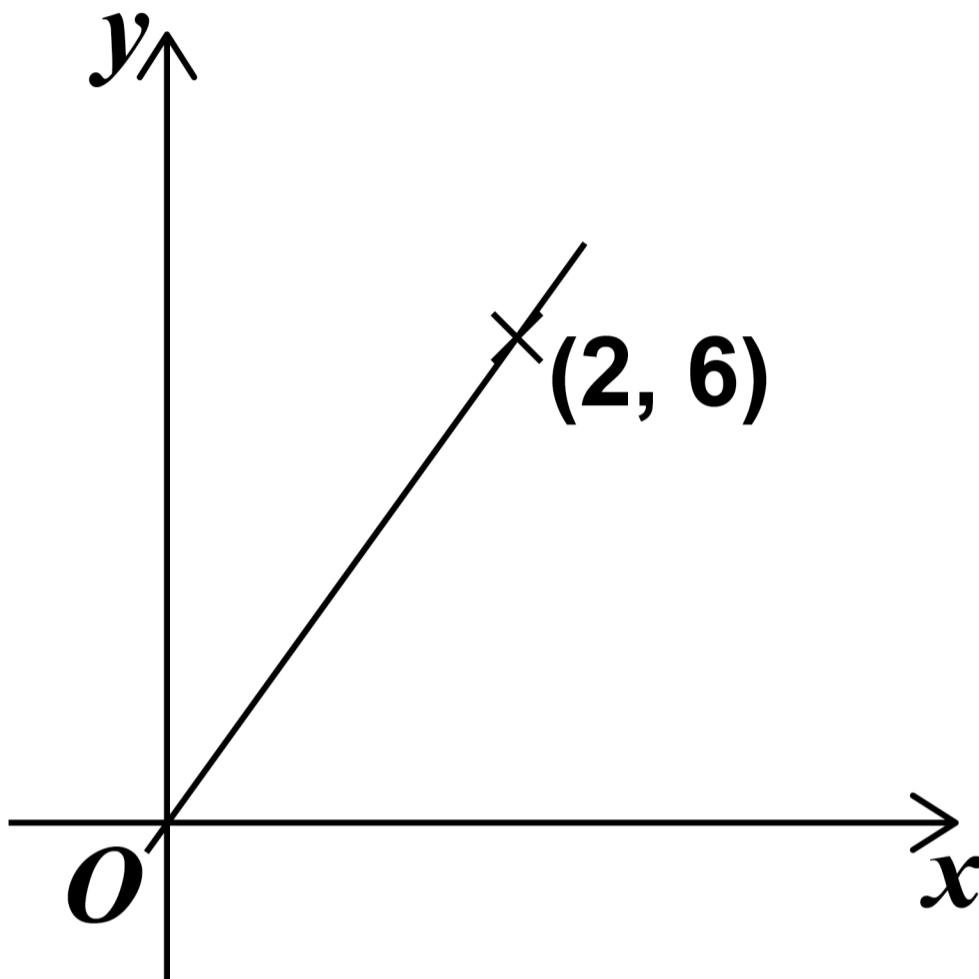
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**Answer** \_\_\_\_\_ %

**[Turn over]**



- 17 A straight line passes through  $O$  and  $(2, 6)$



Circle the equation of the line.  
[1 mark]

$$y = x + 4$$

$$y = 6$$

$$y = 3x$$

$$y = \frac{1}{3}x$$

6
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**18 (a) Work out 110% of 80 [2 marks]**

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

**18 (b) Work out 21 as a fraction of 12**

**Circle your answer. [1 mark]**

$$\frac{7}{4}$$

$$\frac{4}{7}$$

$$\frac{3}{4}$$

$$\frac{4}{3}$$

**[Turn over]**



**19** Bags X and Y each contain counters.

**Bag X**

**30 counters**

**Each counter is green, white or yellow**

**Bag Y**

**5 counters**

**3 green and 2 red**

**19 (a)**  $P(\text{green counter from X}) = P(\text{red counter from Y})$

**Work out the number of green counters in X. [2 marks]**

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

**19 (b) All 35 counters are put into one bag.**

**One counter is picked at random.**

**Work out the probability that the counter is NOT red. [2 marks]**

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

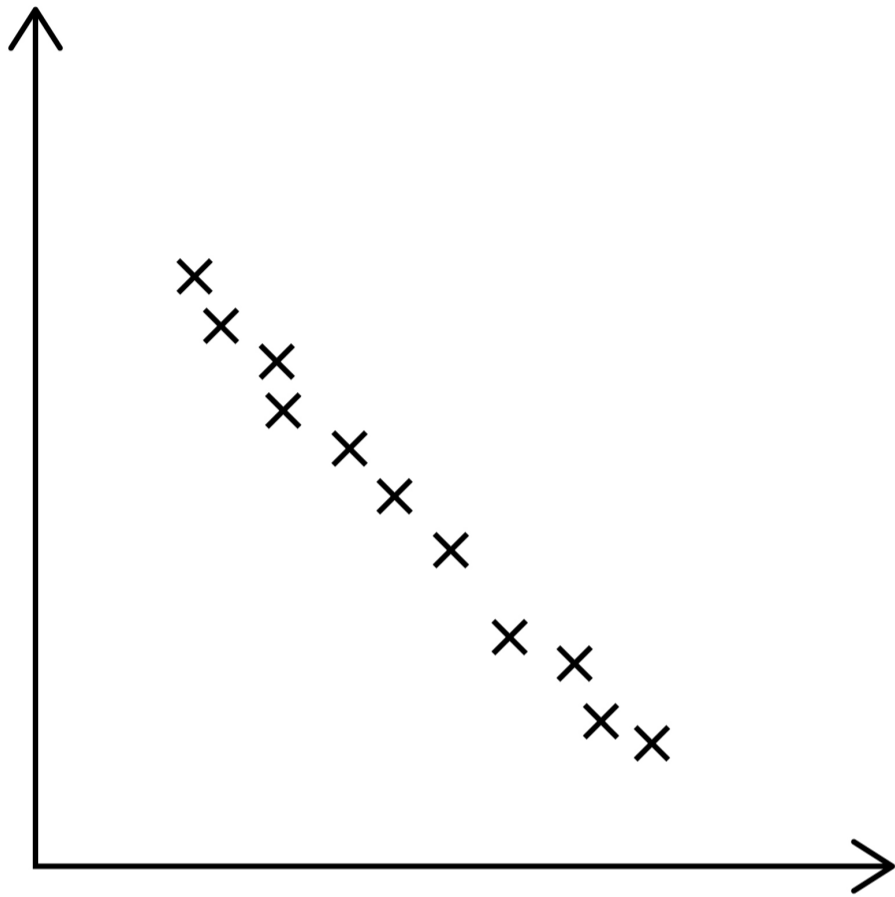
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$\frac{\quad}{7}$
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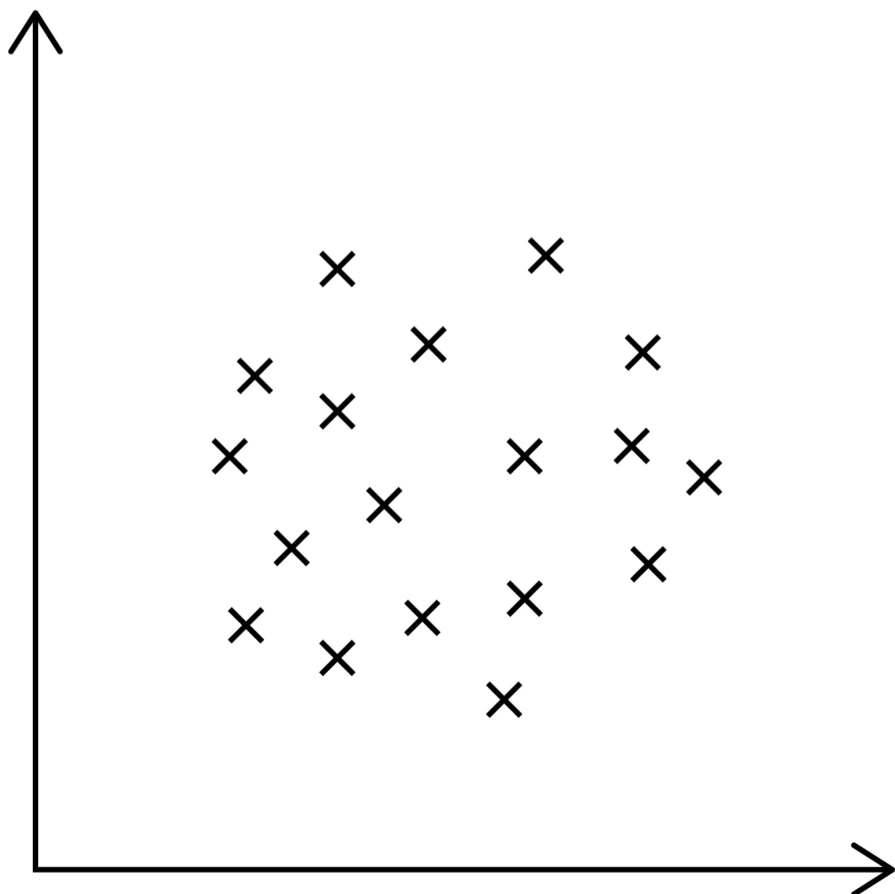


20 A and B are scatter graphs.

**Graph A**



**Graph B**





**What type of correlation is shown by each graph?**

**Choose from**

- **Weak positive**
- **Strong positive**
- **Weak negative**
- **Strong negative**
- **No correlation**

**[2 marks]**

**Graph A** \_\_\_\_\_

**Graph B** \_\_\_\_\_

**[Turn over]**



**21 (a) All the terms of a GEOMETRIC progression are positive.**

**The second and fourth terms are shown.**

..... 4 ..... 16

**Work out the first and third terms.  
[2 marks]**

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**First term** \_\_\_\_\_

**Third term** \_\_\_\_\_



**21 (b) The first two terms of an ARITHMETIC progression are shown.**

$$p \qquad 5p \qquad \dots$$

**The sum of the first three terms is 90**

**Work out the value of  $p$ . [3 marks]**

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

**[Turn over]**

7
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**22 This formula converts temperature in degrees Fahrenheit ( $F$ ) to kelvin ( $K$ )**

$$K = \frac{5}{9} (F - 32) + 273$$

**A pottery oven is heated to 2192 degrees Fahrenheit.**

**Work out this temperature in kelvin.  
[3 marks]**

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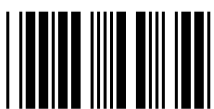
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**Answer** \_\_\_\_\_ **kelvin**

**23** As a decimal  $\frac{11}{40} = 0.275$

**Work out**  $\frac{33}{400}$  **as a decimal.**

**[2 marks]**

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

**[Turn over]**



**24 The cost of a holiday is £2400**

**Rana pays a deposit followed by monthly payments, in the ratio**

**deposit : total of the monthly payments = 3 : 5**

**She makes 6 equal monthly payments.**

**Work out her monthly payment.  
[4 marks]**

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**Answer** £ \_\_\_\_\_

**25 Factorise fully  $2x^2 + 6x$  [2 marks]**

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

**[Turn over]**

11



**26 Two wire shapes make an earring.**

**The shapes are**

**a circle with radius 21 mm**

**and**

**a quarter circle.**

**The diagram, on the opposite page,  
is not drawn accurately.**

<p><b>radius of circle : radius of quarter circle = 7 : 2</b></p>
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**26 (a) Show that the radius of the quarter  
circle is 6 mm [1 mark]**

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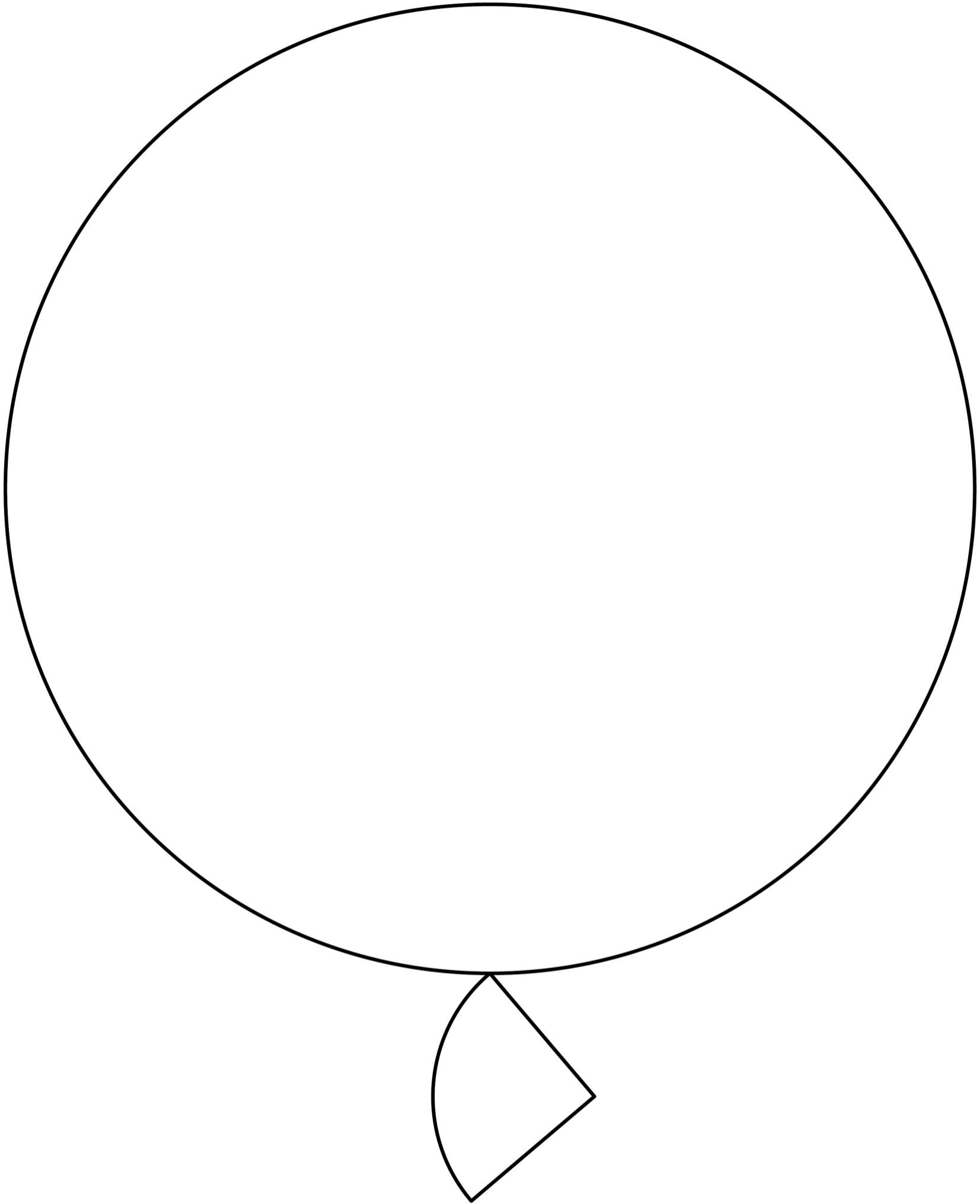
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41



**[Turn over]**



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**26 (b) Work out the TOTAL length of the wire in the earring.**

**Give your answer in the form  $a\pi + b$  where  $a$  and  $b$  are integers.  
[4 marks]**

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

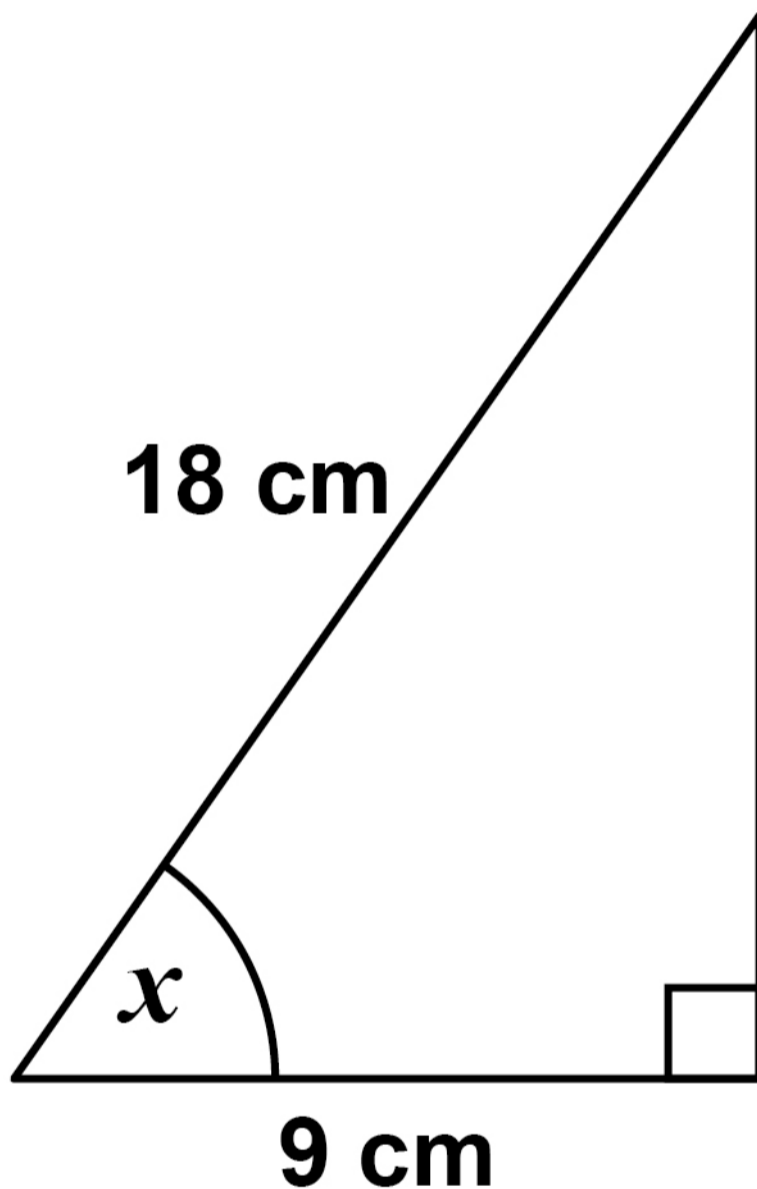


**[Turn over]**

**5**

- 27 Use trigonometry to work out the size of angle  $x$ . [2 marks]

The diagram is not drawn accurately.



45

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

**[Turn over]**



28 Rearrange  $c = \frac{d + 2}{3}$  to make  $d$   
the subject. [2 marks]

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



**29 (a) Write 360 000 in standard form.  
[1 mark]**

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

**29 (b) Write  $9.2 \times 10^{-3}$  as an ordinary  
number. [1 mark]**

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

**END OF QUESTIONS**

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<b>6</b>



**Additional page, if required.**

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






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For Examiner's Use	
Pages	Mark
4–6	
8–10	
12–15	
16–19	
20–22	
23–25	
26–28	
29–31	
32–35	
36–39	
40–43	
44–47	
<b>TOTAL</b>	

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