

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**  
**GCSE (9–1)**  
**J560/01**

**MATHEMATICS**

**Paper 1 (Foundation Tier)**

**TUESDAY 6 NOVEMBER 2018: Morning**

**TIME ALLOWED: 1 hour 30 minutes**  
**plus your additional time allowance**

**MODIFIED ENLARGED**

<b>First name</b>		<b>Last name</b>	
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<b>Centre number</b>						<b>Candidate number</b>				
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**YOU MAY USE:**

**a scientific or graphical calculator**  
**geometrical instruments**  
**tracing paper**  
**a Model for Question 2**

**READ INSTRUCTIONS OVERLEAF**



## **INSTRUCTIONS**

**Use black ink. You may use an HB pencil for graphs and diagrams.**

**Complete the boxes on the front page with your name, centre number and candidate number.**

**Answer ALL the questions.**

**Read each question carefully before you start to write your answer.**

**Where appropriate, your answers should be supported with working. Marks may be given for a correct method even if the answer is incorrect.**

**Write your answer to each question in the space provided. If additional space is required, use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.**

## **INFORMATION**

**The total mark for this paper is 100.**

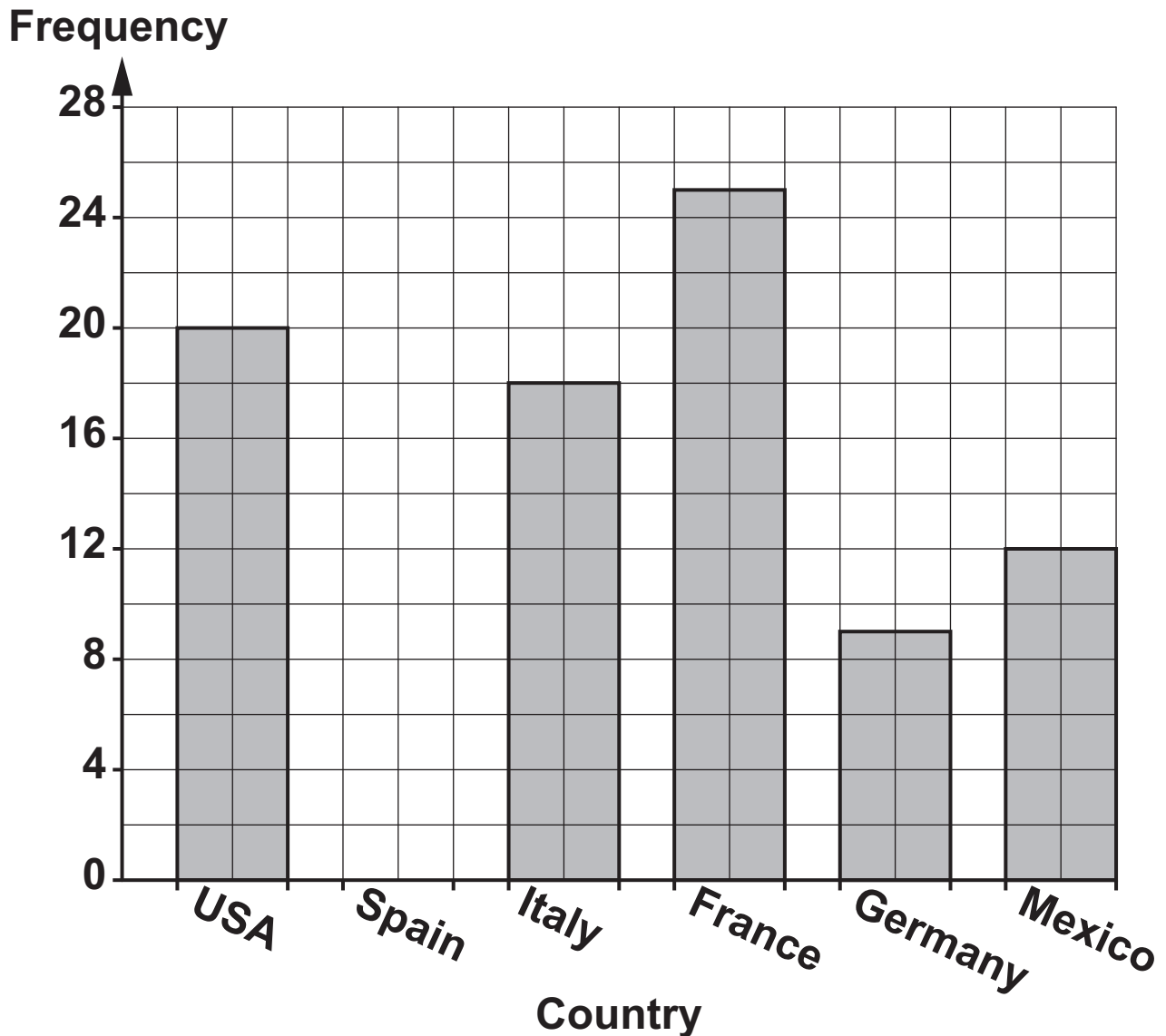
**The marks for each question are shown in brackets [ ].**

**Use the  $\pi$  button on your calculator or take  $\pi$  to be 3.142 unless the question says otherwise.**

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Answer ALL the questions.

- 1 Jodie asked some people to choose from six countries where they would most like to go on holiday. The bar chart shows her results for five of the countries.



- (a) 14 people answered Spain.

Show this information on the bar chart. [1]

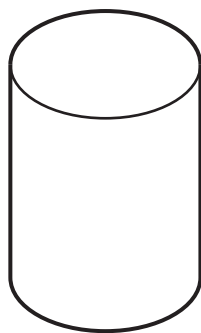
**(b) Complete these sentences.**

**(i) \_\_\_\_\_ was chosen by the fewest people. [1]**

**(ii) \_\_\_\_\_ people chose France. [1]**

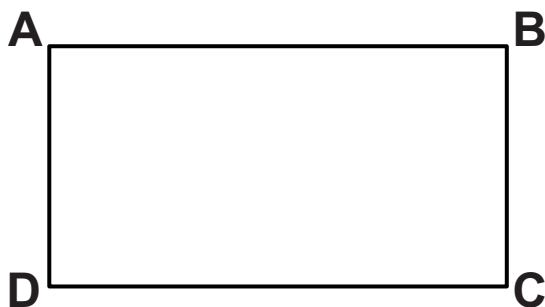
**(iii) \_\_\_\_\_ MORE people chose Italy than Mexico. [1]**

- 2 (a) Write down the mathematical name of this solid.  
You may use a model to help you.



(a) \_\_\_\_\_ [1]

- (b) ABCD is a rectangle.



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Add the correct mathematical symbol to the diagram to show that angle BCD is a right angle. [1]

- 3 Louiza changes £320 into euros.  
£1 is worth 1.14 euros.**

**How many euros does she receive?**

\_\_\_\_\_ euros [2]

**4 (a) Write down each of the following.**

**(i) An even number.**

**(a)(i) \_\_\_\_\_ [1]**

**(ii) A factor of 25.**

**(ii) \_\_\_\_\_ [1]**

**(iii) A prime number between 10 and 20.**

**(iii) \_\_\_\_\_ [1]**

**(iv) A cube number.**

**(iv) \_\_\_\_\_ [1]**



**(b) Find the highest common factor (HCF) of 35 and 91.**

**(b) \_\_\_\_\_ [2]**

**5 (a) Write 3 : 57 as a ratio in its simplest form.**

**(a) \_\_\_\_\_ : \_\_\_\_\_ [1]**

**(b) Bob and Chris share some money in the ratio 2 : 3.  
Bob receives £8.**

**Work out how much Chris receives.**

**(b) £ \_\_\_\_\_ [2]**

**6 Solve.**

**(a)  $x - 6 = 4$**

**(a)  $x =$  \_\_\_\_\_ [1]**

**(b)  $\frac{12}{x} = 3$**

**(b)  $x =$  \_\_\_\_\_ [1]**

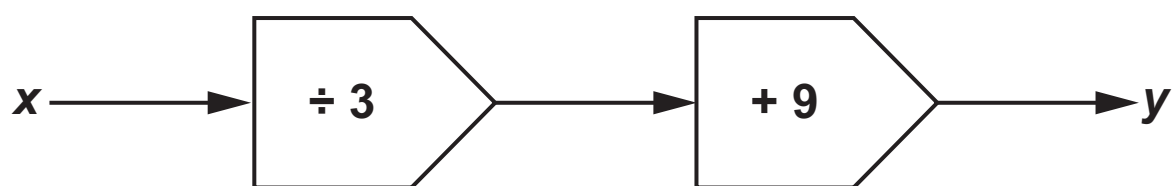
**7 (a) Round 81.469 to 1 decimal place.**

**(a) \_\_\_\_\_ [1]**

**(b) Round 0.005 694 to 3 significant figures.**

**(b) \_\_\_\_\_ [1]**

- 8 Here is a function.  
The input is  $x$  and the output is  $y$ .



Write an algebraic expression for  $y$  in terms  $x$ .

$y =$  \_\_\_\_\_ [2]

**9 Liu wants to decorate some cakes with shapes.**

**She has 140 shapes.**

**Each shape is a star or a heart.**

**The ratio of the number of stars : number of hearts is  
4 : 3.**

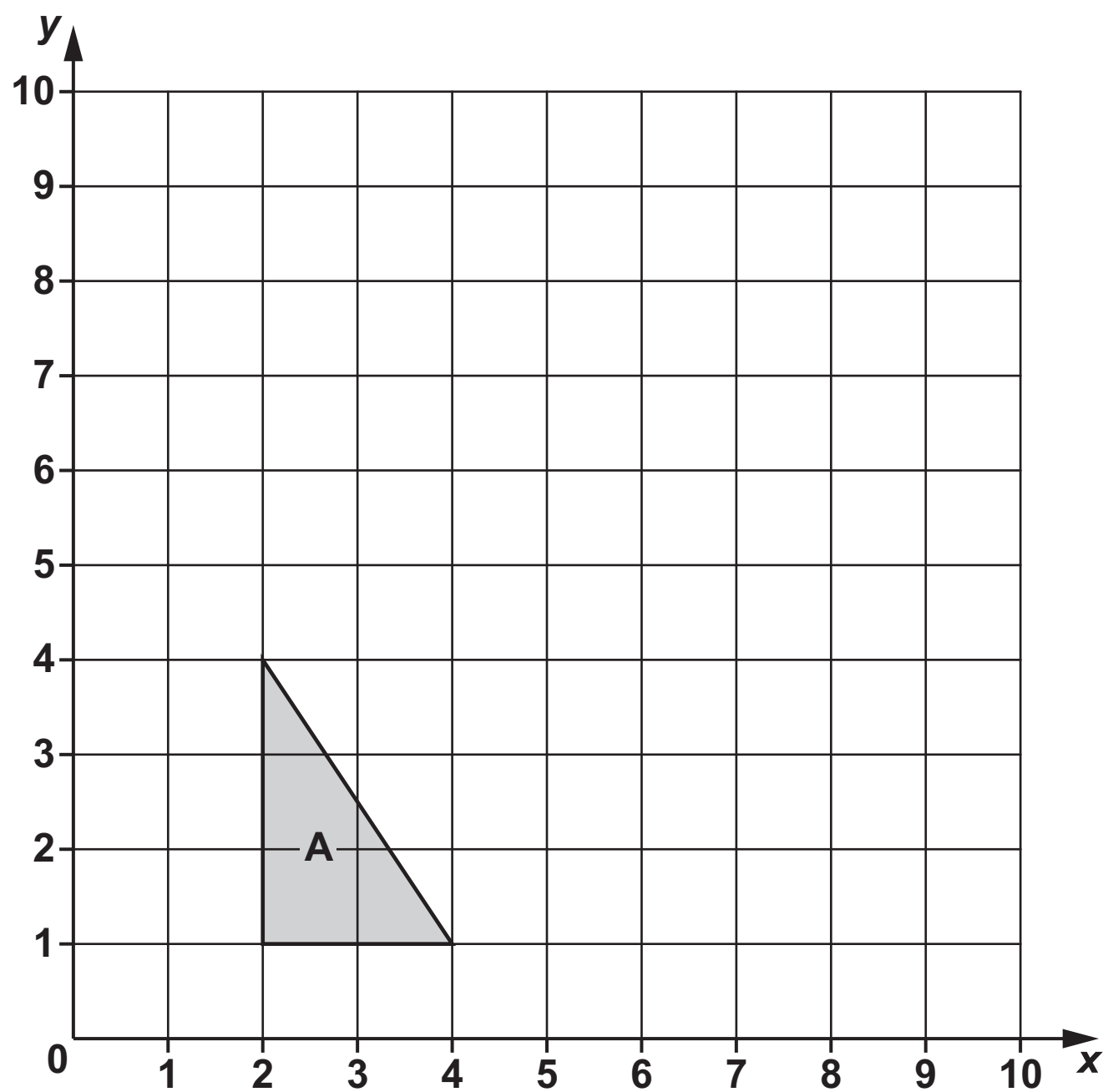
**She wants to put 5 stars and 4 hearts on each cake.**

**How many cakes can Liu decorate?**

**Show full working to support your answer.**

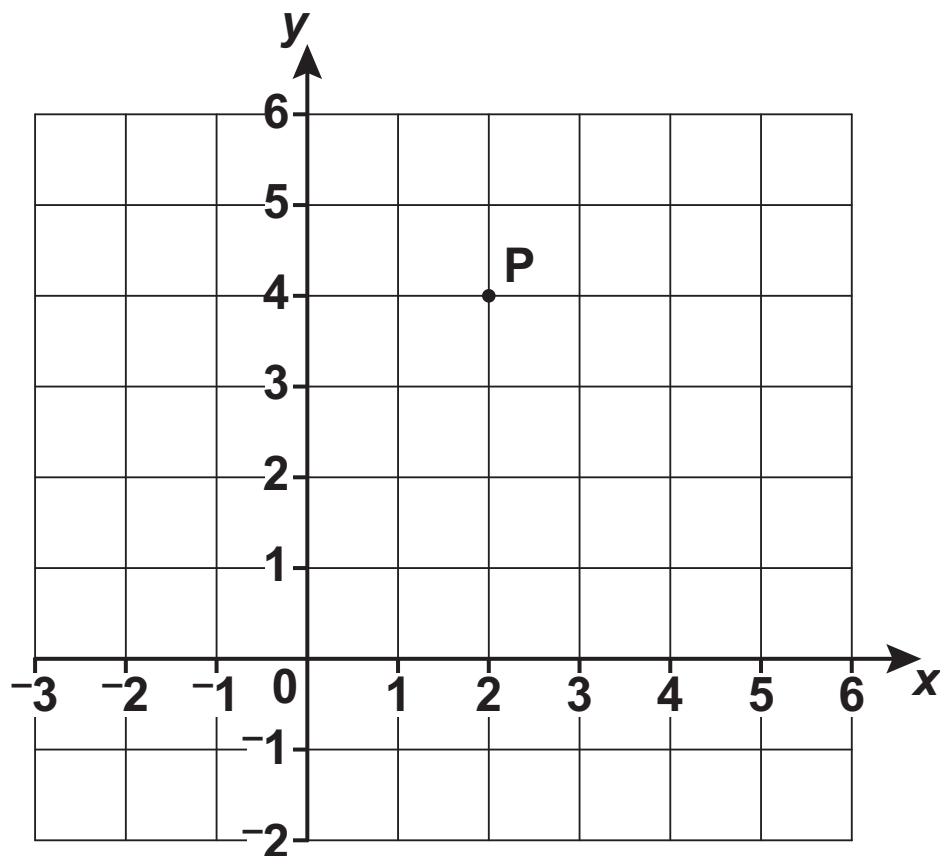
\_\_\_\_\_ **[5]**

10 Triangle A is drawn on the grid below.



Enlarge triangle A with scale factor 2 and centre of enlargement (0, 0). [3]

**11 Point P is shown on this grid.**



**(a) Write down the coordinates of point P.**

**(a) ( \_\_\_\_\_ , \_\_\_\_\_ ) [1]**

**(b) Plot point Q at (-1, 2). [1]**

## 12 Use the formula

$$v = u + at$$

to find the final velocity, when

the initial velocity is 8 m/s

the acceleration is 3 m/s<sup>2</sup>

the time is 5 seconds.

\_\_\_\_\_ m/s [2]



**13 Calculate the circumference of a circle with diameter 10 cm.**

\_\_\_\_\_ cm [2]

**14 (a) Find the value of  $x$  in each of the following.**

**(i)  $a^4 \times a^3 = a^x$**

**(a)(i)  $x =$  \_\_\_\_\_ [1]**

**(ii)  $(b^4)^3 = b^x$**

**(ii)  $x =$  \_\_\_\_\_ [1]**

**(b) Factorise fully.**

**$18x^2 + 9x$**

**(b) \_\_\_\_\_ [2]**

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**15 Tea bags of similar quality are sold in three different sized packs:**

**Small Pack**

**80  
tea bags  
for  
£2.10**

**Medium pack**

**150  
tea bags  
for  
£3.55**

**Large pack**

**220  
tea bags  
for  
£5.25**

**(a) Which pack is the best value for money?  
Show how you decide.**

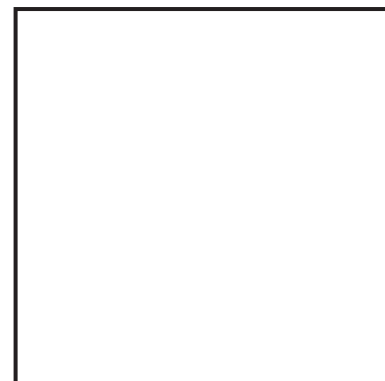
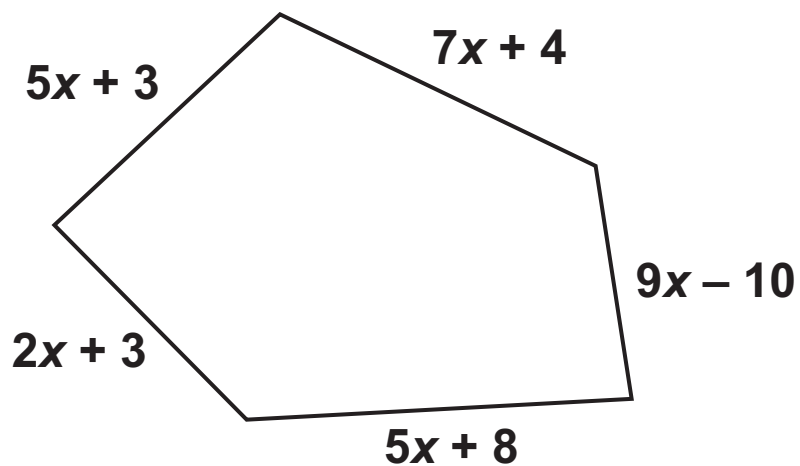
\_\_\_\_\_ because \_\_\_\_\_  
\_\_\_\_\_ [4]

**(b) Explain why someone may buy a pack which is  
not the best value for money.**

\_\_\_\_\_  
\_\_\_\_\_ [1]

- 16 The perimeter of the pentagon is equal to the perimeter of the square.

NOT TO SCALE



**Find an expression for the length of one side of the square.**

**Give your answer in terms of  $x$  in its simplest form.**

\_\_\_\_\_ **[4]**

**17 James works from 2pm until 8.30pm on both Thursday and Friday.  
He is paid £12 per hour.**

**On Saturday he is paid  $1\frac{1}{2}$  times this hourly pay.**

**He works for 5 hours on Saturday.**

**Calculate how much James earns IN TOTAL for these three days.**

**£ \_\_\_\_\_ [6]**



**18 Doctor Jones starts an appointment every 20 minutes. Doctor Warholm starts an appointment every 35 minutes.**

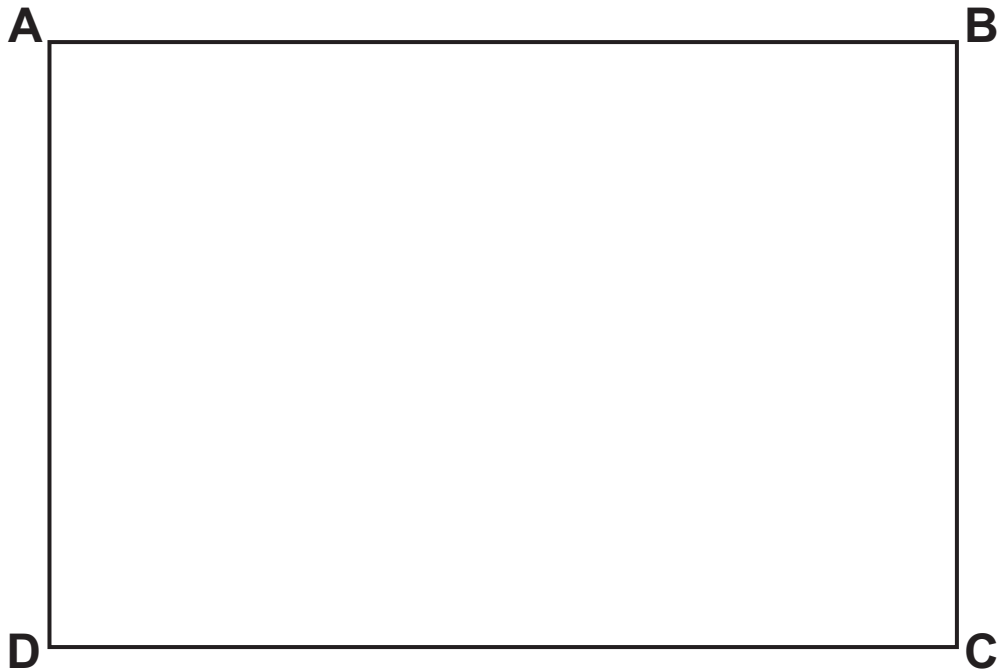
**The first appointment for both doctors starts at 8.30 am.**

**What is the next time that they have an appointment start at the same time?**

\_\_\_\_\_ **[4]**

**19 The scale drawing shows Katy's garden ABCD.**

**SCALE: 1 CM REPRESENTS 5 M**



**Katy places a statue in the garden.**

**The statue is**

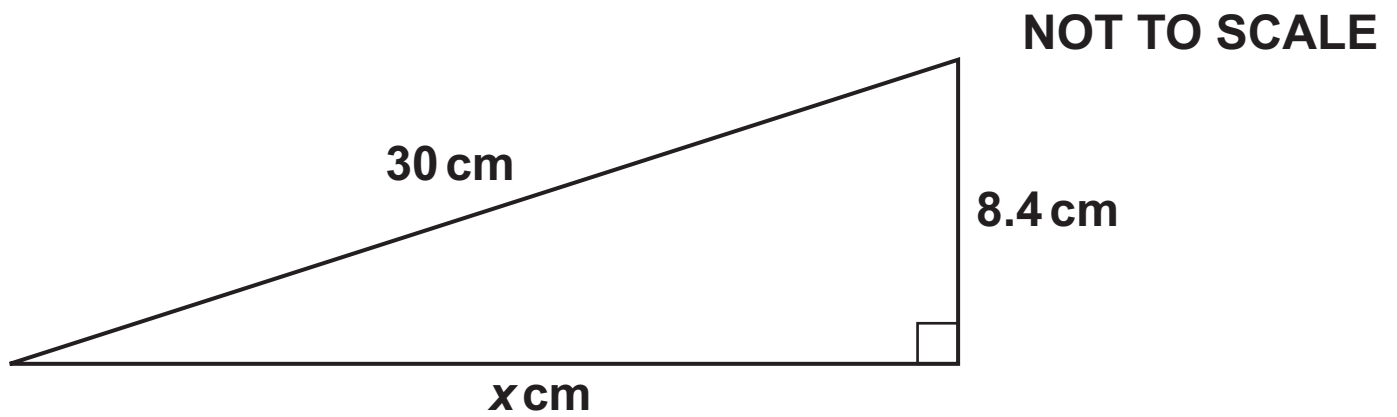
**more than 30 m from D**

**closer to CB than AB.**

**Construct and shade the region where the statue  
could be placed.**

**Show all your construction lines. [5]**

20 Here is a right-angled triangle.



Work out the value of  $x$ .

$x =$  \_\_\_\_\_ [3]

**21 Shari buys a box of 60 candles for £125.  
She sells the candles for £2.25 each.**

**Calculate her percentage profit.**

\_\_\_\_\_ % [4]

**22 Hector can run 400 metres in 66 seconds.**

**(a) Use this information to show that he could run 5 kilometres in less than 14 minutes. [4]**

**(b) Hector tries to run 5 kilometres in less than 14 minutes.**

**Give one reason why he might not achieve this.**

\_\_\_\_\_  
\_\_\_\_\_ [1]

**23 Here are the interest rates for two bank accounts.**

**Northern Savings Bank  
(NSB)**

**2.5% per year  
COMPOUND INTEREST**

**Central Alliance Bank  
(CAB)**

**2.7% per year  
SIMPLE INTEREST**

**Mia puts £6400 in each account.**

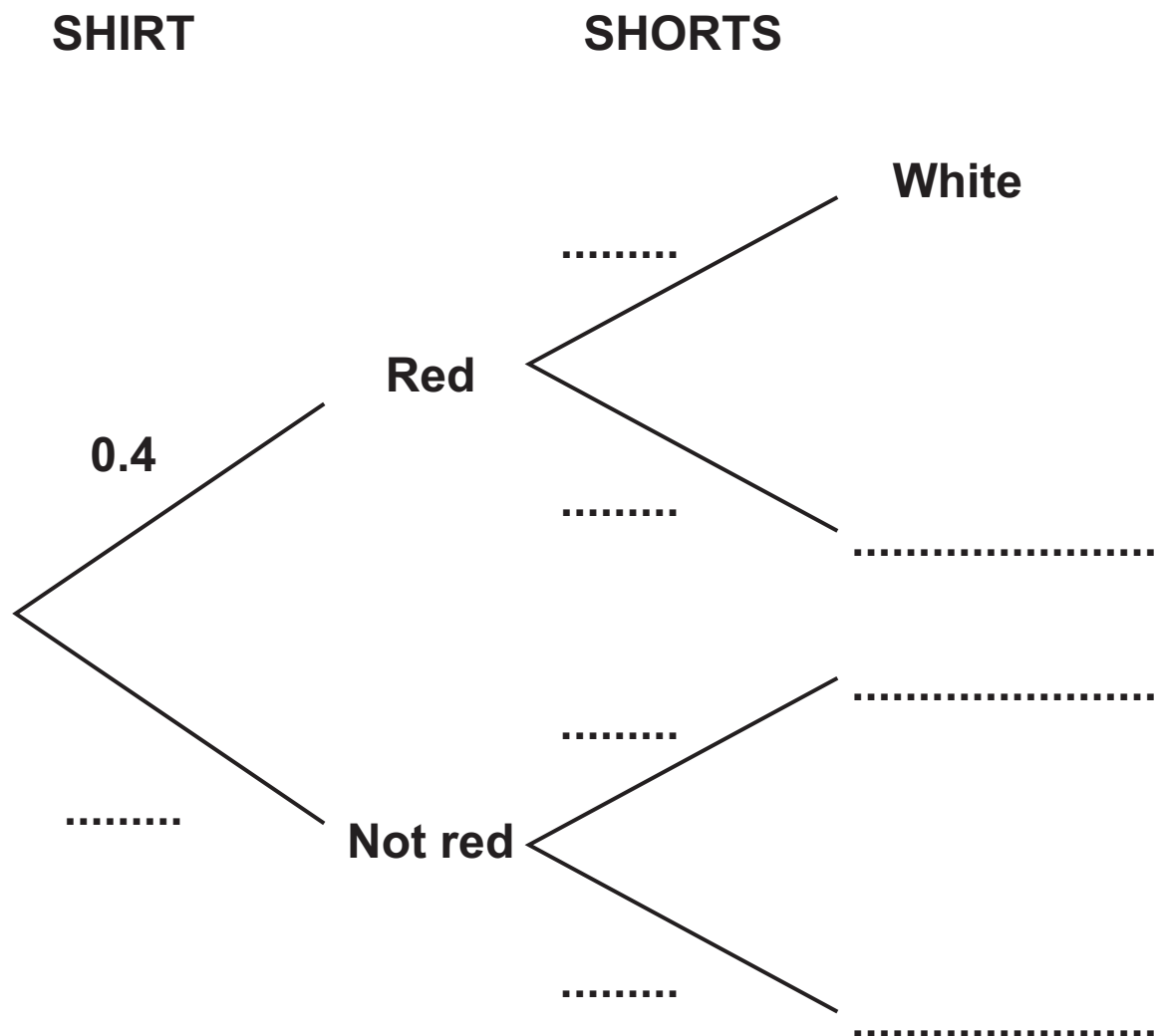
**Calculate the difference in value between the two  
accounts after 8 years.**

**Give your answer correct to the nearest penny.**

£ \_\_\_\_\_ [6]

- 24 Romelu picks a shirt and shorts.  
The probability he picks a red shirt is 0.4.  
The probability he picks white shorts is 0.7.

(a) Complete the tree diagram. [3]





**(b) Calculate the probability that Romelu picks a red shirt but does not pick white shorts.**

**(b) \_\_\_\_\_ [2]**

**25 Marcin buys 7 rulers and 15 crayons for £7.  
A ruler costs 12p more than a crayon.**

**Find the cost of one crayon.**

**cost of one crayon = \_\_\_\_\_ p [5]**

**26 Here are the first four terms of a sequence.**

**28      23      18      13**

**Find the  $n$ th term of the sequence.**

\_\_\_\_\_ **[2]**

**27** 72 children are asked whether they have a laptop or an iPad.

31 have a laptop.

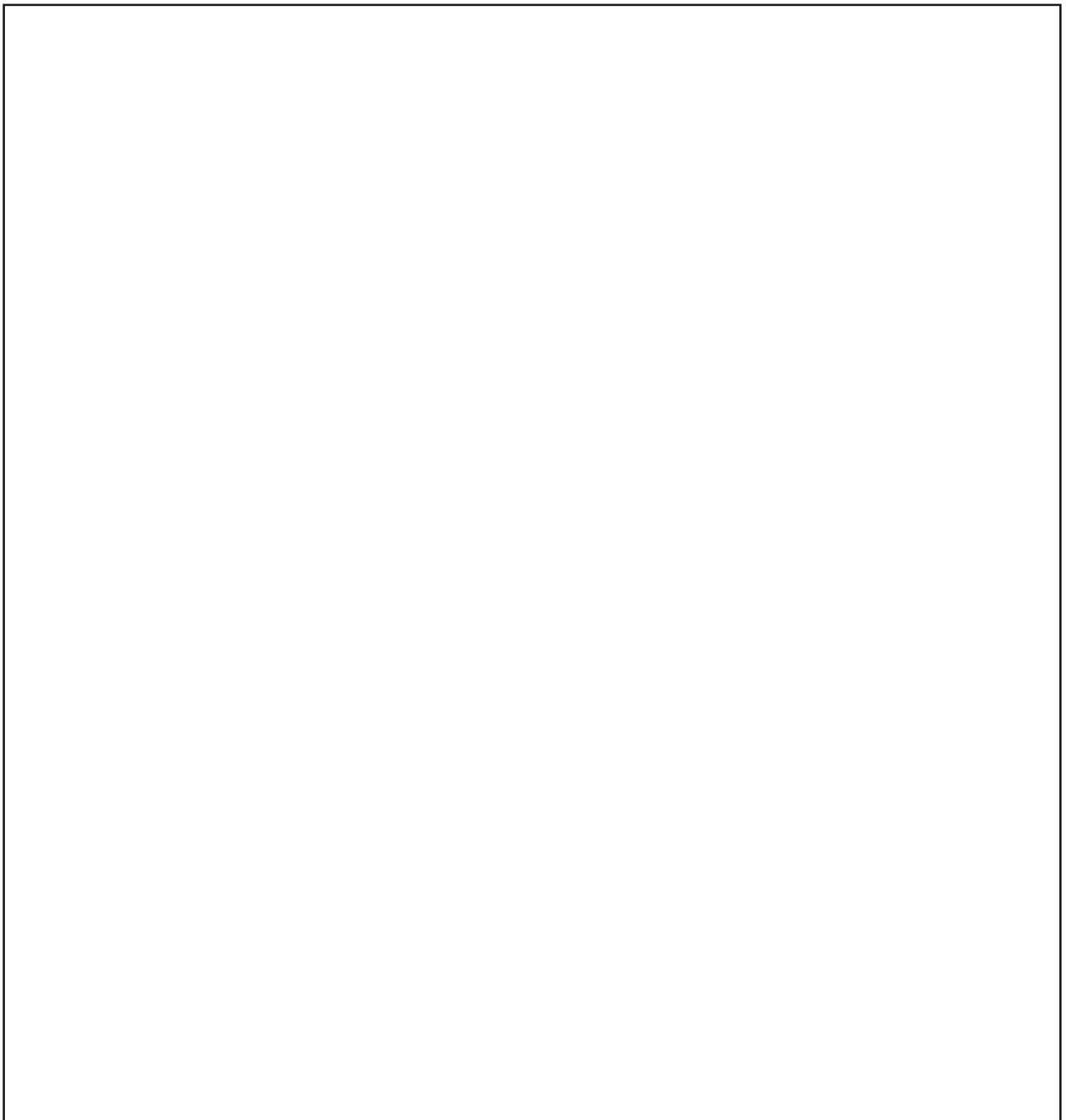
48 have an iPad.

12 have both.

5 have neither.

**(a)** Represent this information on a Venn diagram. [3]

8



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

**Write down the probability that they have an iPad but not a laptop.**

**(b) \_\_\_\_\_ [2]**

**END OF QUESTION PAPER**

**ADDITIONAL ANSWER SPACE**

**If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).**




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