

CANDIDATE  
NAME

--

CENTRE  
NUMBER

--	--	--	--	--

CANDIDATE  
NUMBER

--	--	--	--



**MATHEMATICS**

**1112/01**

Paper 1

**April 2017**

**1 hour**

Candidates answer on the Question Paper.

Additional Materials:      Geometrical instruments  
   Tracing paper (optional)

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

**NO CALCULATOR ALLOWED.**

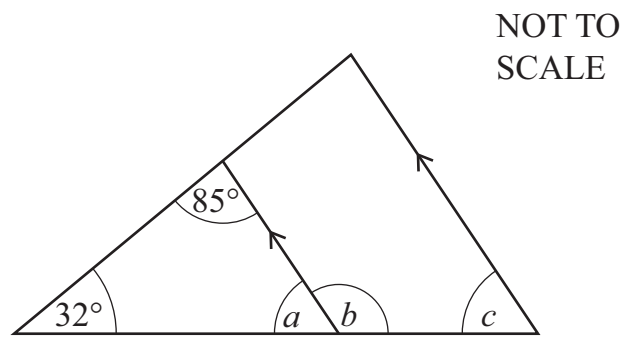
You should show all your working in the booklet.

The number of marks is given in brackets [ ] at the end of each question or part question.

The total number of marks for this paper is 50.

This document consists of **15** printed pages and **1** blank page.

- 1 Work out angles  $a$ ,  $b$  and  $c$  in the diagram.



$$a = \dots\dots\dots^\circ \quad [1]$$

$$b = \dots\dots\dots^\circ \quad [1]$$

$$c = \dots\dots\dots^\circ \quad [1]$$

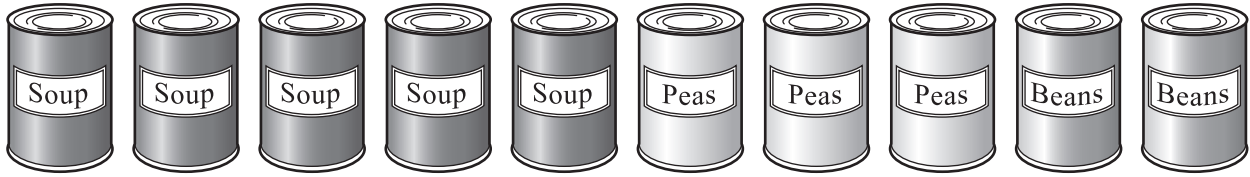
- 2 Mia, Lily, Mike, Jamila and Oliver each record the time they take to do their homework. Mia takes  $t$  minutes. The table gives information about the time the four other students take.

Complete the table.

Description	Expression for time (minutes)
Lily takes 20 minutes longer than Mia.	$t + 20$
Mike takes twice as long as Mia.	.....
Jamila takes 10 minutes less than Mia.	.....
Oliver takes .....	$\frac{t}{2}$

[3]

- 3 Ahmed has 10 tins in his cupboard.  
Five contain soup, three contain peas and two contain beans.

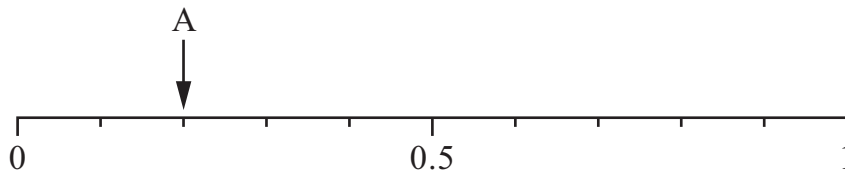


Ahmed takes a tin from his cupboard without looking.

Four events are:

- A Ahmed picks a tin containing beans.  
B Ahmed picks a tin containing soup.  
C Ahmed picks a tin containing oranges.  
D Ahmed picks a tin containing peas.

Place arrows on the probability scale to show how likely each of the events is.  
The first one has been done for you.

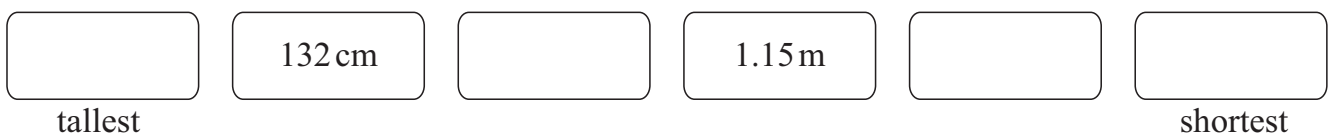


[2]

- 4 These cards show the heights of six plants.



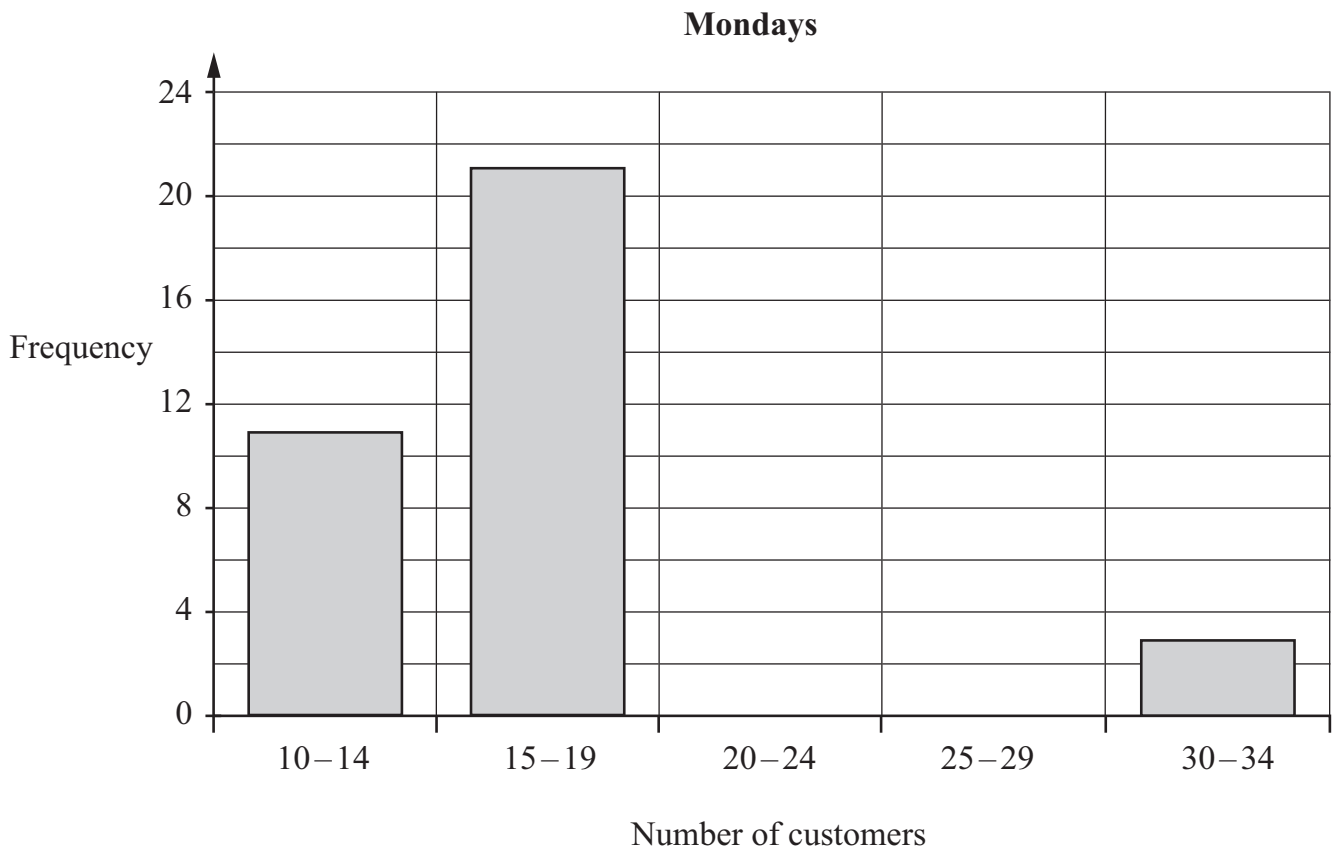
Arrange the heights in order of size, starting with the **tallest**.  
Two cards have been done for you.



[1]

- 5 The table and frequency diagram show some information about the number of customers visiting a shop on each of the last 50 **Mondays**.

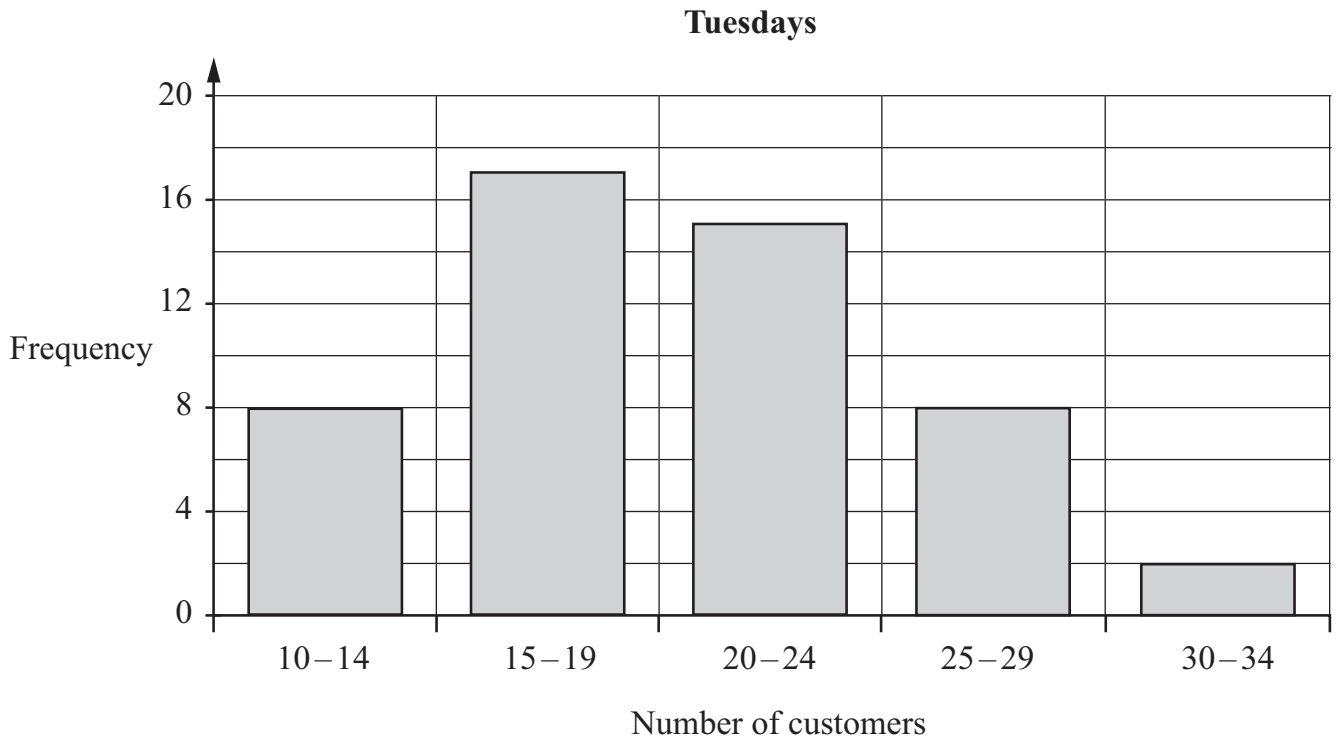
Number of customers	Frequency
10 – 14	11
15 – 19	21
20 – 24	10
25 – 29	
30 – 34	
<b>Total</b>	<b>50</b>



(a) Use this information to complete the table. [1]

(b) Complete the frequency diagram. [1]

- (c) The number of customers using the shop on the last 50 **Tuesdays** is shown in this frequency diagram.



Youssef says,

“The modal class is the same for the last 50 Mondays and Tuesdays.”

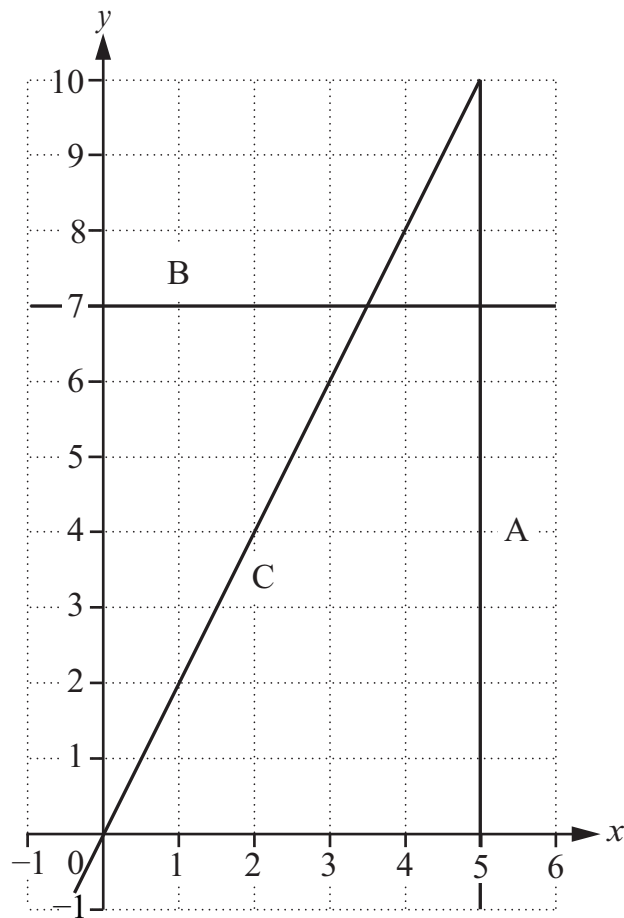
Tick (✓) to show if Youssef is correct.

Yes       No

Explain your answer.

.....  
 ..... [1]

6 The graph shows three straight lines A, B and C.



(a) Put a ring around the equation of line A.

$x + 5 = 0$

$x = 5$

$y = 5$

$y = 5x$

[1]

(b) Write down the equation of line B.

..... [1]

(c) Tick (✓) to show whether each of these facts about line C is true or false.

	True	False
The point (2, 4) lies on line C.	<input type="checkbox"/>	<input type="checkbox"/>
The $y$ -coordinate is <b>always</b> two more than the $x$ -coordinate.	<input type="checkbox"/>	<input type="checkbox"/>
The equation is $y = 2x$ .	<input type="checkbox"/>	<input type="checkbox"/>

[1]

- 7 The diagram shows a row of 7 triangles made from matches.



The number of matches needed to make a row of  $t$  triangles is given by the expression  $2t + 1$

Work out the number of matches needed for a row of 36 triangles.

..... [1]

- 8 (a) Change  $\frac{2}{5}$  to a decimal.

..... [1]

- (b) Write an integer in each box to make the statement true.

$$\frac{2}{5} < \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} < \frac{1}{2}$$

[1]

9 Calculate  $23.456 - 1.78$

..... [1]

10 Use the information in the box to write down the value of each of the following.

$27.6 \times 4.1 = 113.16$
----------------------------

(a)  $2.76 \times 4.1$

..... [1]

(b)  $113.16 \div 41$

..... [1]

(c)  $13.8 \times 8.2$

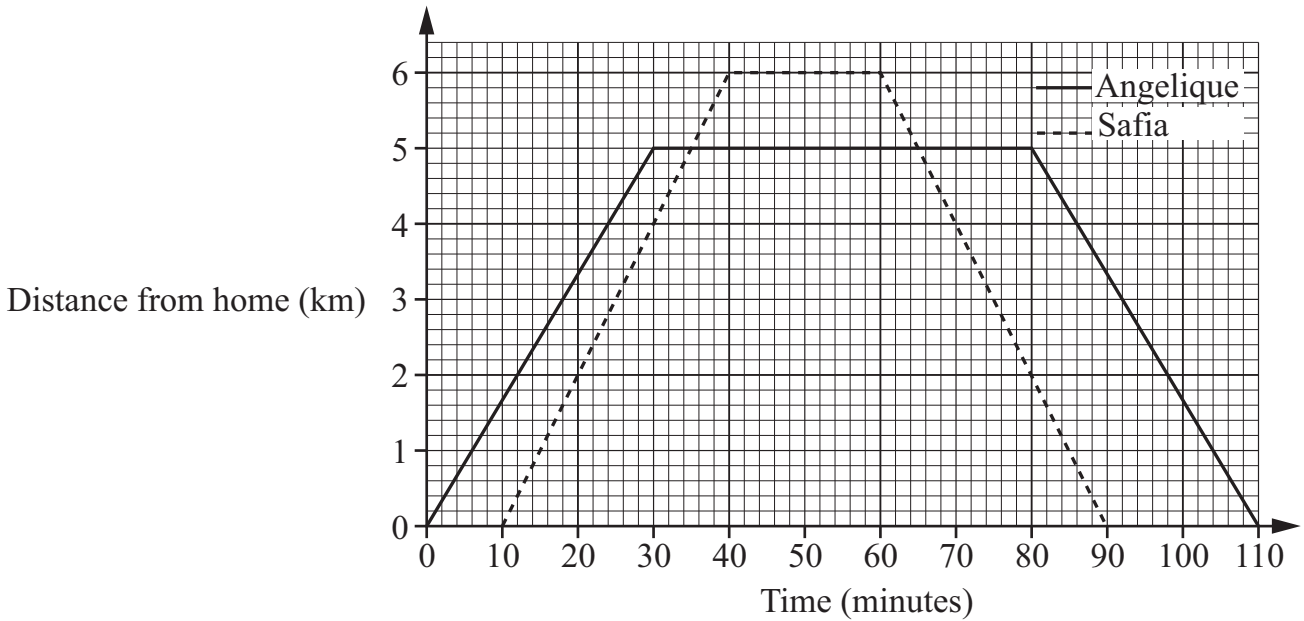
..... [1]

11 Find 12% of \$34

\$ ..... [1]



12 Angelique and Safia each go for a run.  
The travel graph shows their runs.



(a) Angelique and Safia both stopped during their runs.

Work out how much longer Angelique stopped than Safia.

..... minutes [1]

(b) Complete the sentences.

..... runs the furthest distance.

She runs ..... km in total. [1]

(c) Safia runs faster than Angelique.

Explain how the graph shows this.

.....  
..... [1]

13 360 can be written as  $2^x \times 3^y \times 5$ , where  $x$  and  $y$  are positive integers.

Work out the value of  $x$  and the value of  $y$ .

$x =$  .....

$y =$  ..... [2]

14 Chen throws two six-sided dice.  
He records the **difference** between the two scores.

Complete this table showing the possible outcomes.

Second dice	6	5	4	3	2	1	0
	5	4	3	2	1	0	1
	4	3	2	1	0	1	
	3	2	1	0	1		
	2	1	0	1			
	1	0	1				5
	1	2	3	4	5	6	
	First dice						

[1]

15 Write the missing number in each box.

(a)  $0.25 \times 10^3 = \boxed{\phantom{000}}$

[1]

(b)  $\boxed{\phantom{00}} \div 10^{-1} = 25$

[1]

16 Apples cost \$1.85 per kilogram.

Work out the cost of 1.6 kilograms of apples.

\$ ..... [2]

17 The coordinates of point  $A$  are  $(1, 2)$  and the coordinates of point  $B$  are  $(-3, 4)$ .

Find the midpoint of the line  $AB$ .

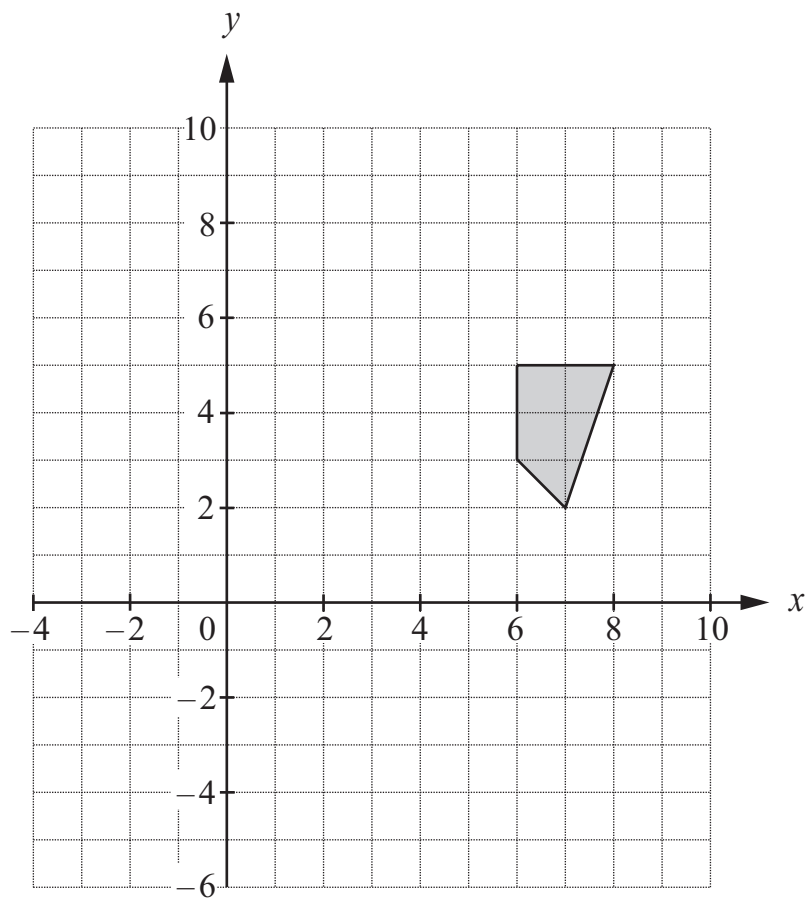
( ..... , ..... ) [2]

18 Write the missing numbers in the boxes.

$$\frac{2}{3} \div \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} = \frac{2}{3} \times \frac{4}{3} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}$$

[2]

19 A quadrilateral is shown on the grid.



Enlarge the quadrilateral by scale factor 3, centre (10, 4).

[2]

20 Draw lines to match the equal values.

$$5^{-1} \qquad 0.125$$

$$5^{-2} \qquad 0.2$$

$$2^{-3} \qquad 0.25$$

$$3^{-2} \qquad 4\%$$

$$\left(\frac{1}{2}\right)^2 \qquad \frac{1}{9} \qquad [2]$$

21 Aiko needs 20 litres of paint.  
She mixes her paint using paint powder and water.  
She uses these mixing instructions.

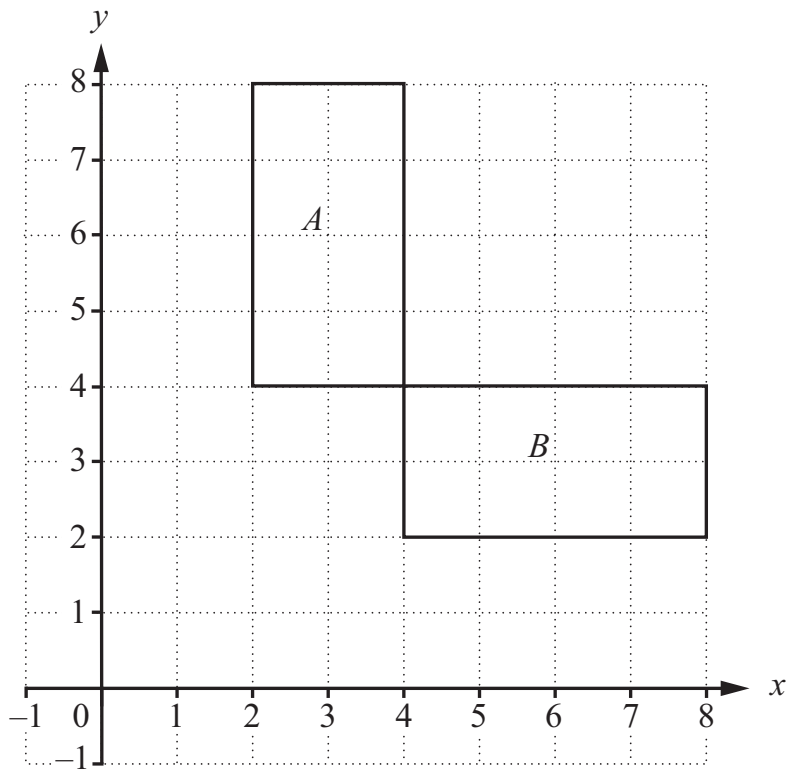
To make 200 ml of paint  
mix 40 g of paint powder  
with 120 ml of water

The paint powder comes in packets of 0.6 kg.

Work out how many packets of paint powder Aiko needs.

..... [3]

22 Here are two rectangles.



(a) Give a description of the **reflection** that transforms rectangle *A* onto rectangle *B*.

..... [1]

(b) Give a description of a **rotation** that transforms rectangle *A* onto rectangle *B*.

.....  
 ..... [2]

23 Put a ring around the calculations that have an answer **greater** than 42

$42 \times 0.17$

$42 \div 0.18$

$42 \times \frac{3}{11}$

$42 \div \frac{5}{8}$

[1]

24 Complete this multiplication grid.

	×	1.2	
4			1
			0.3

[2]

**BLANK PAGE**

---

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cie.org.uk](http://www.cie.org.uk) after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.