

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE**

A502/01

MATHEMATICS A

Unit B (Foundation Tier)

WEDNESDAY 6 NOVEMBER 2013: Morning

DURATION: 1 hour

plus your additional time allowance

MODIFIED ENLARGED

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments

Tracing paper (optional)

<p>WARNING No calculator can be used for this paper</p>

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

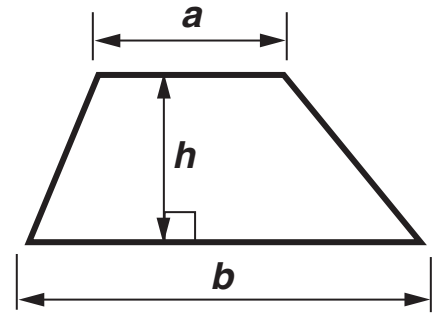
- Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer ALL the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Your answers should be supported with appropriate 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. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).

INFORMATION FOR CANDIDATES

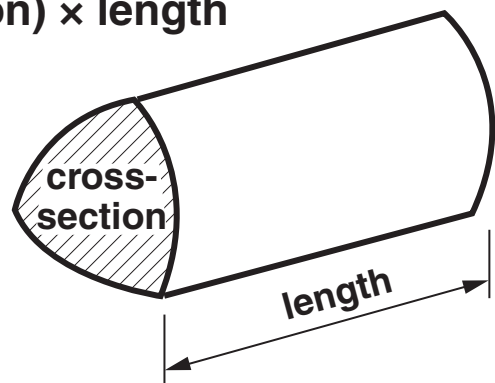
- The number of marks is given in brackets [] at the end of each question or part question.
- Your quality of written communication is assessed in questions marked with an asterisk (*).
- The total number of marks for this paper is 60.

FORMULAE SHEET: FOUNDATION TIER

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = (area of cross-section) \times length



Answer ALL the questions.

- 1 The table below shows the different prices and colours of postage stamps that can be bought in a Post Office.**

Stamp price	Colour
1p	Maroon
2p	Dark Green
5p	Ash Pink
10p	Light Tan
20p	Light Green
50p	Light Grey
£1.00	Ruby
£1.50	Terracotta
£2.00	Slate Blue
£3.00	Purple
£5.00	Grey Blue

- (a) Jay buys a Maroon coloured stamp and a Ruby coloured stamp.**

How much altogether does Jay pay for these stamps?

(a) £ _____ [2]

- (b) Ahmed takes a parcel to the Post Office.
He puts stamps with a total value of £8 on the parcel.
None of the stamps on the parcel are the same.**

Write down two ways this can be done.

(b) First way _____

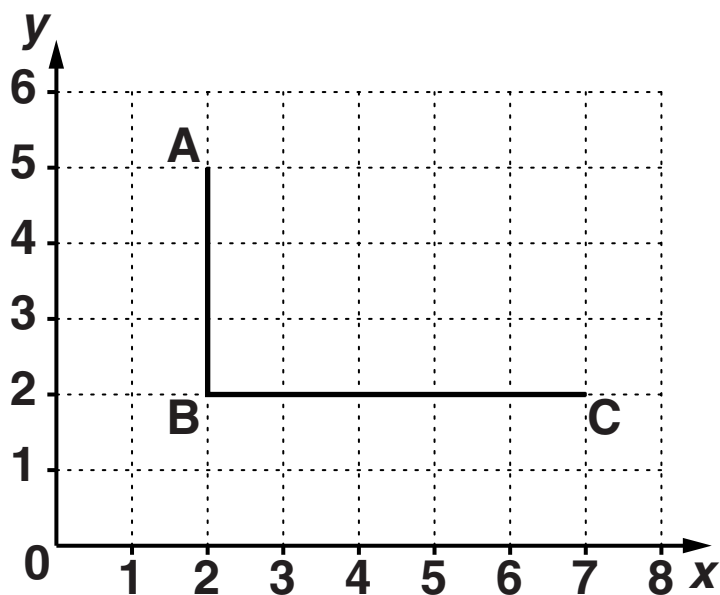
Second way _____ **[2]**

- (c) Carole buys one 2p stamp, two 20p stamps and one 50p stamp.
She pays with a £1 coin.**

How much change should she receive?

(c) _____ **p [2]**

- 2 Two sides of a rectangle ABCD are drawn on the following one-centimetre grid.



- (a) Write down the coordinates of C.

(a) (_____ , _____) [1]

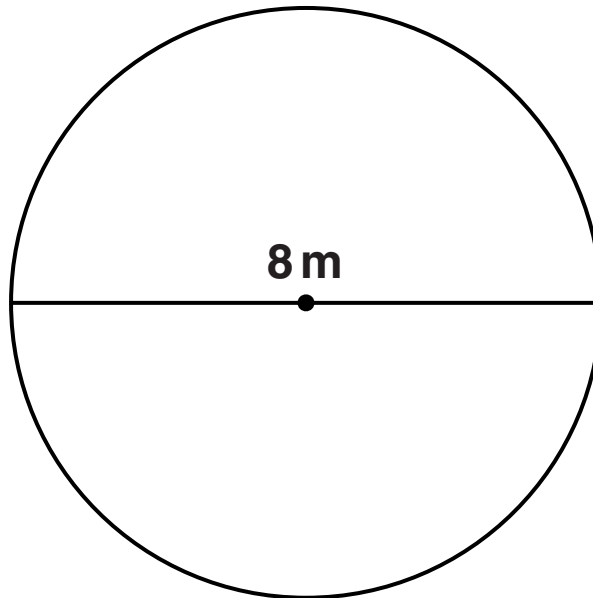
- (b) What is the length of side BC?
Give your answer in MILLIMETRES.

(b) _____ mm [1]

- (c) On the grid, complete rectangle ABCD. [1]

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- 3 Amy has a circular lawn.
Its diameter is 8 metres.
This is shown on the following diagram.**



- (a) A diameter is drawn on the diagram.**

Here is a list of words.

**tangents
semicircles
chords**

Complete the statement below using a word from the list above.

A diameter splits any circle into two

[1]

(b) Write down the radius of Amy's lawn.

(b) _____ m [1]

(c) Amy finds the following rule to work out how far it is around her lawn.

The circumference, C , is 3 times the diameter, d .

Write this as a formula using algebra.

(c) _____ [2]

- 4 (a) Work out each of these calculations.
Write the answers in order, starting with
the smallest.

10% of 310

20×1.5

6^2

$\frac{1}{4}$ of 100

smallest

[4]

**(b)* Kieran took a Maths test and a Science test in September.
These are his test scores.**

Maths	Science
11 out of 20	7 out of 10

**In November, Kieran took another Maths test and another Science test.
These are his new scores.**

Maths	Science
30 out of 50	18 out of 25

Kieran says, “I have improved in both Maths and Science.”

**Is Kieran correct?
Support your answer with evidence. [4]**

- 5 (a) A shop is selling potatoes which cost 61p a kilogram.

ESTIMATE how much Maria will pay for 2.9 kg of these potatoes.
Show the values you use.

(a) _____ [3]

- (b) A supermarket sells bags of potatoes.
A 5 kg bag costs £2.50.

- (i) Marek buys 4 of these bags of potatoes.

How much does he spend?

(b)(i) £ _____ [1]

- (ii)* Alison needs 30 potatoes for a barbeque.
She buys one of these bags.
The supermarket says that each potato weighs
at least 125 g and not more than 200 g.**

**Can Alison be sure that she has enough
potatoes?**

Show how you decide. [3]

- (c) John eats one potato for his dinner each day.
3 potatoes weigh about a pound.
There are 365 days in a year.**

**ROUGHLY how many pounds of potatoes does
John eat in a year?**

(c) _____ pounds [2]

(d) Nikki asked some people in her school these questions.

How many people in your family live at home, including you?
--

About what weight of potato, in grams, do YOU eat each day?
--

She plotted the results on the scatter graph on the opposite page.

(i) There are two points that do not appear to fit the pattern of Nikki's results.

Write down the answers that ONE of these two people gave to Nikki.

Number in family _____

and weight of potato eaten _____ g
[1]

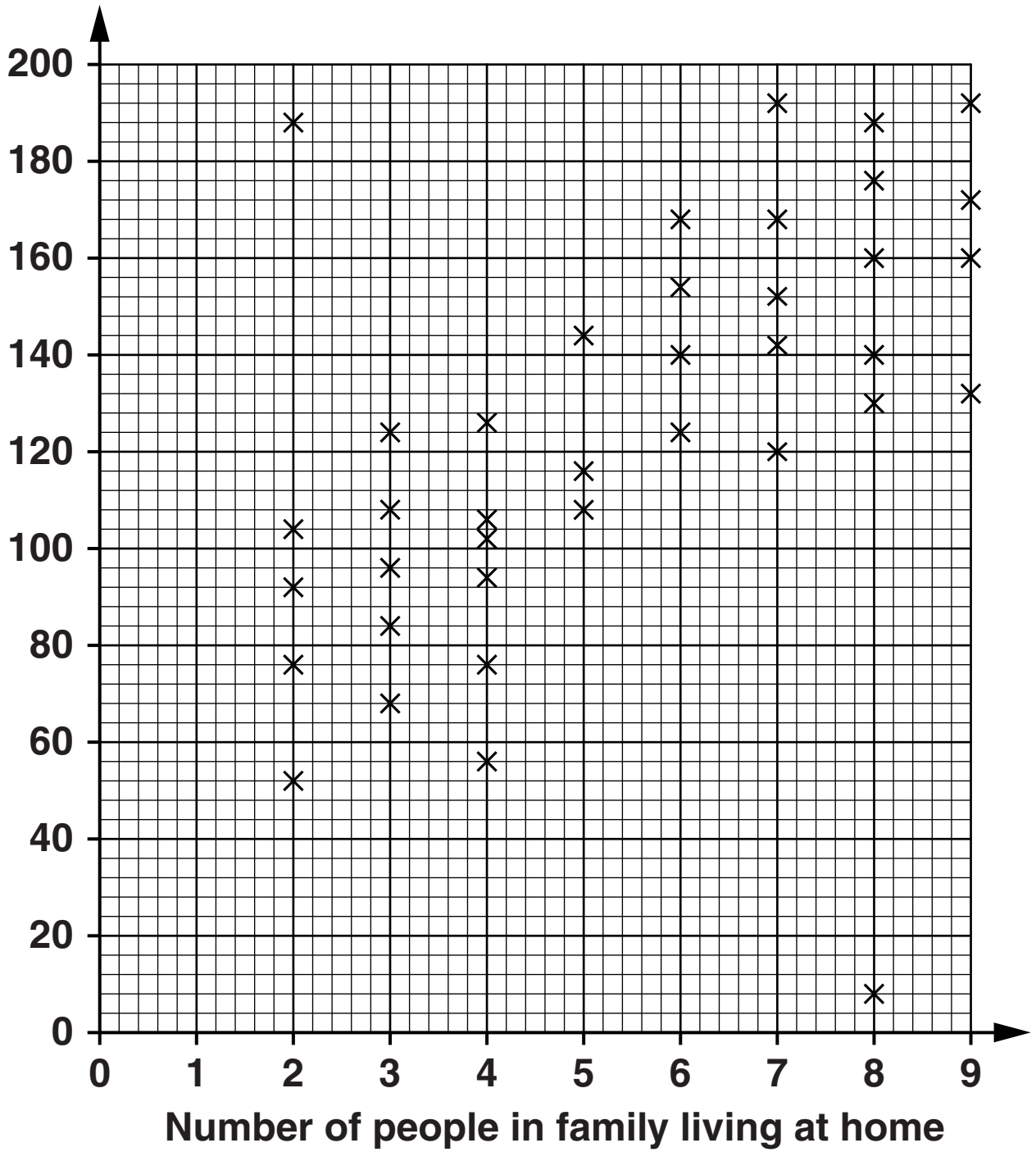
(ii) What does Nikki's scatter diagram suggest about the weight of potato eaten by a person and the number of their family living at home?

_____ **[1]**

(iii) Describe the type of correlation shown in the scatter diagram.

(d)(iii) _____ [1]

**Weight of
potato eaten
each day (g)**



6 (a) (i) How many sides does a regular hexagon have?

(a)(i) _____ [1]

(ii) Write down two other things that are special about any REGULAR hexagon.

1 _____

2 _____ [2]

(b) The diagram below shows a drawing of part of a regular hexagon.
One side has been extended.



NOT TO SCALE

Work out the size of one interior angle of a regular hexagon.

(b) _____ $^\circ$ [2]

(c) Use one of the following

less than

equal to

**greater
than**

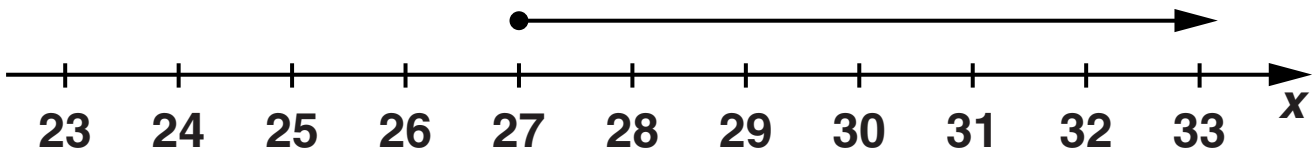
to complete this statement.

**The size of an
interior angle
of a square is**

**the size of an
exterior angle of
a regular hexagon.**

Use figures to support your choice. [2]

- 7 (a) Complete the inequality that is represented on the following number line.



(a) x _____ [1]

- (b) Solve the following inequality.

$$x + 3 < 11$$

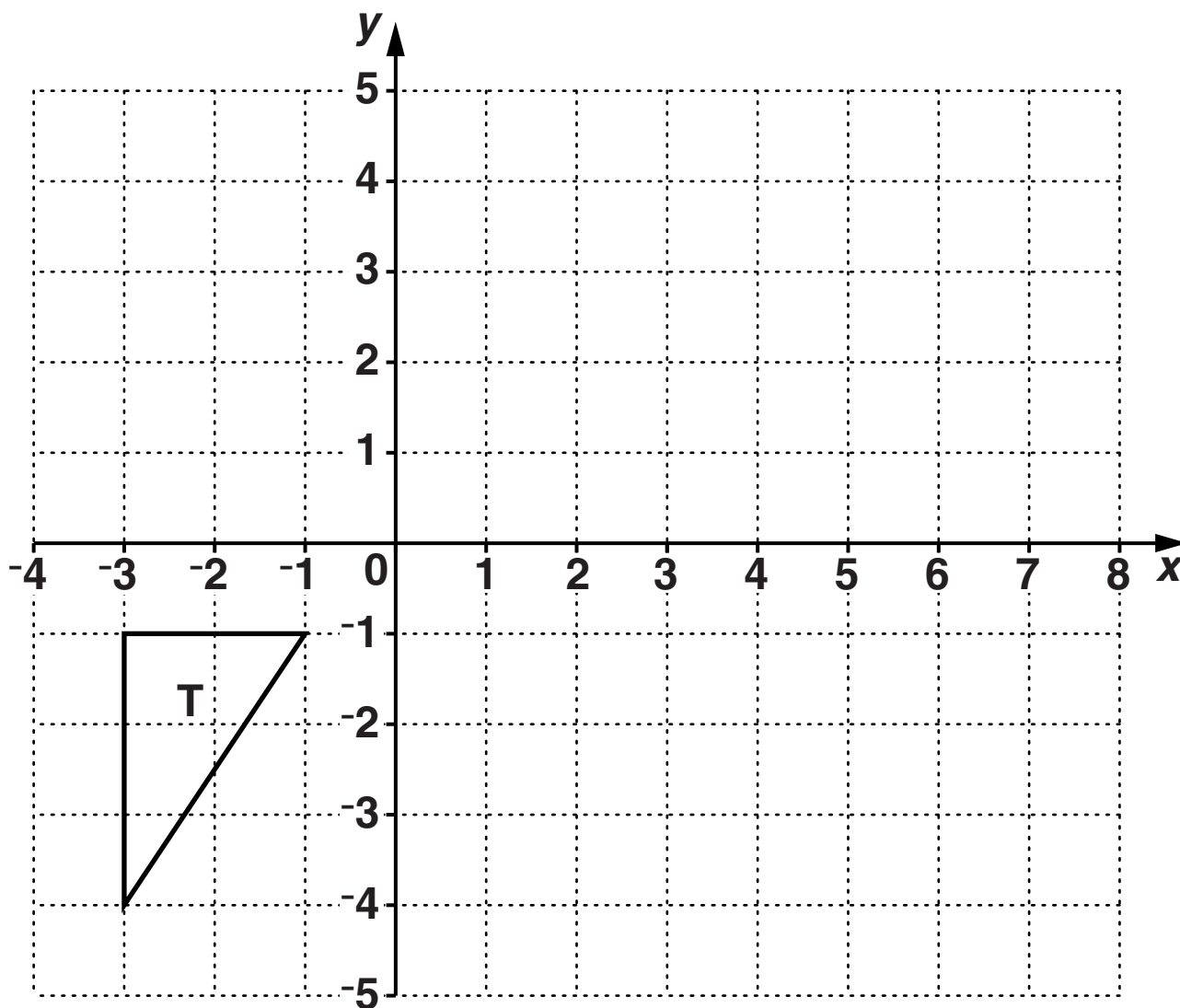
(b) _____ [1]

- (c) Find the smallest WHOLE number that satisfies the following inequality.

$$x - 1 \geq 4.6$$

(c) _____ [2]

8 The diagram below shows triangle T on a grid.



(a) Reflect triangle T in the x -axis.
Label the image A. [2]

(b) Rotate triangle T 180° about the point $(0, 0)$.
Label the image B. [2]

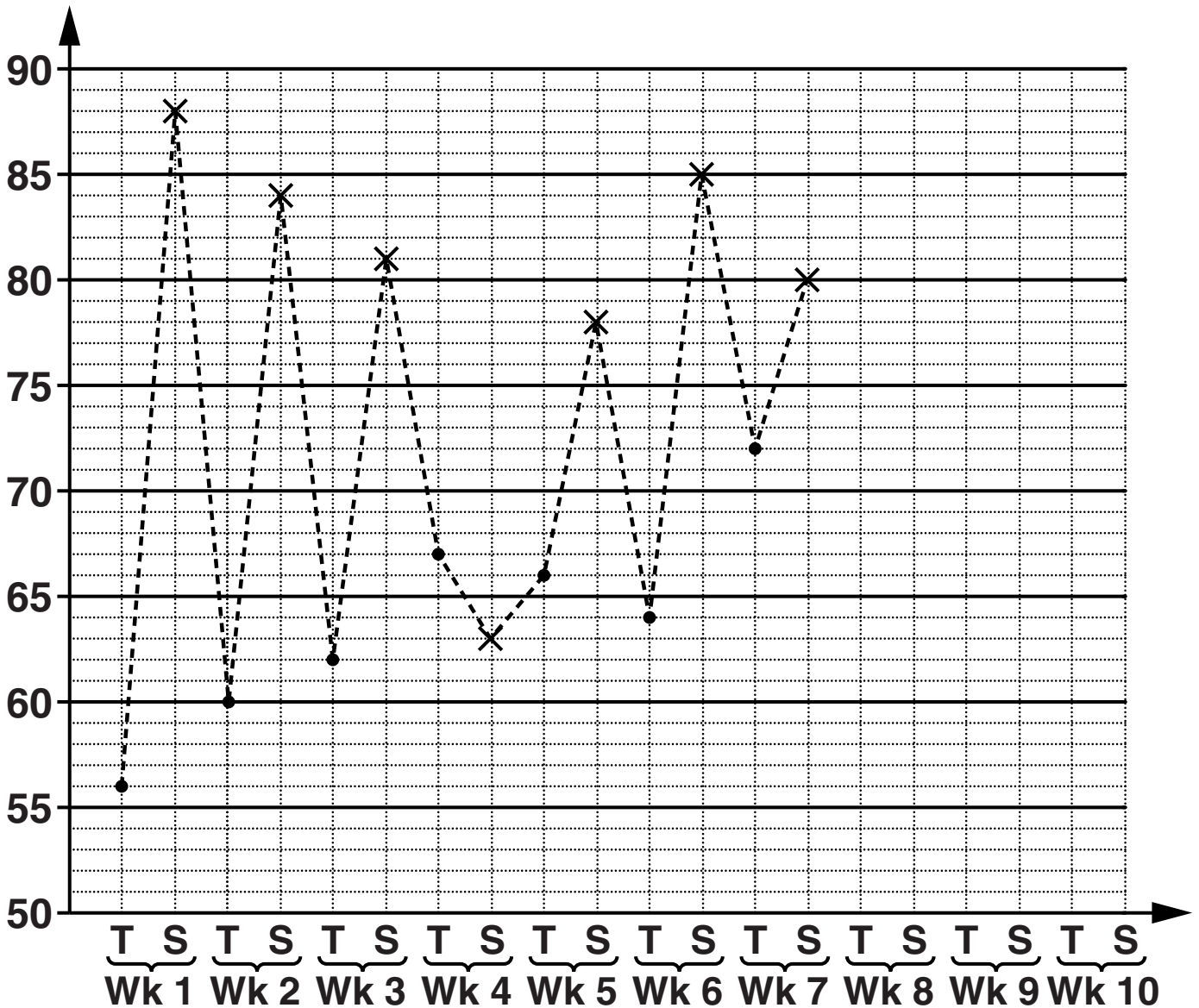
(c) Translate triangle T by $\begin{pmatrix} 7 \\ 3 \end{pmatrix}$.

Label the image C. [2]

9 Robin sells ice creams at a market on Thursdays and Saturdays.
 He records how many ice creams he sells on each of these days for 10 weeks.
 His results are shown in the following table.

Week (Wk)	1	2	3	4	5	6	7	8	9	10
Thursday (T)	56	60	62	67	66	64	72	74	77	78
Saturday (S)	88	84	81	63	78	85	80	84	86	83

Number of ice
creams sold



(a) Complete the time series graph.
The first 7 weeks have been done for you. [2]

(b) Look at the time series graph.

Make two comments about Robin's data.

(1) _____

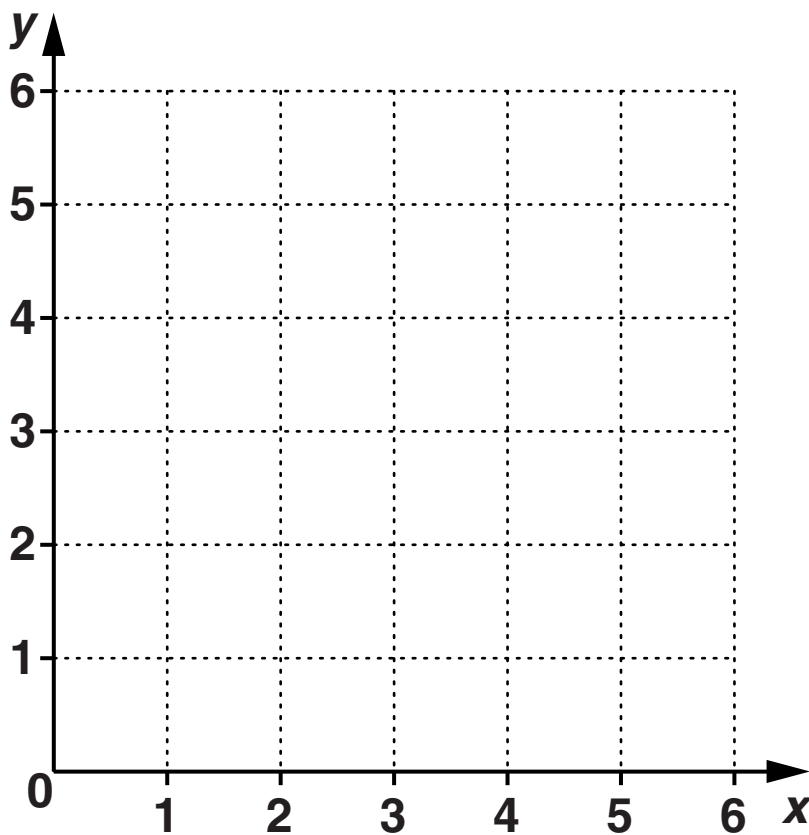
(2) _____

_____ **[2]**

- 10 (a) Complete the following table for $2x + 3y = 12$ by filling in the three missing numbers. [2]

x	0	4.5	
y			0

- (b) On the following grid draw the graph of $2x + 3y = 12$ for $0 \leq x \leq 6$. [2]



(c) Use your graph to find the gradient of the line $2x + 3y = 12$.

(c) _____ [2]

END OF QUESTION PAPER



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