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1. *(a)* Fill in the boxes below to make each calculation correct. [4]

8	×	£0.45	=	£ 3.60
6	×	£ 1.05	=	£6.30
12	×	65p £0.65	=	£7.80
£3.60	÷	10	=	£0.36 36p

6.30 / 6

7.8 / 0.65

$x = \frac{3.6}{0.36}$ $\frac{3.60}{x} = 0.36$

(b) (i) Find the total of ~~£7.30, £15.60 and 87p~~ [1]

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£0·87

(b) (i) Find the total of £7.30, £15.60 and 87p. [1]

7·30
15·60
0·87
£23·77

(ii) Write this total correct to the nearest £1. [1]

£24

(iii) Write this total correct to the nearest £10. [1]

£20

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2. Circle either TRUE or FALSE for each of the following statements. [2]

STATEMENT		
This shape is a pentagon. 	TRUE	FALSE
The straight line shown in this circle is a diameter. 	TRUE	FALSE
All quadrilaterals can be split into two triangles. 	TRUE	FALSE
All isosceles triangles have 3 sides of equal length.	TRUE	FALSE

3. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

Charlotte writes down 3 different factors of 20.
The sum of the 3 factors is greater than 10 but less than 15.

What 3 factors could Charlotte have written down?

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3. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

Charlotte writes down 3 different factors of 20.
The sum of the 3 factors is greater than 10 but less than 15.

What 3 factors could Charlotte have written down?
You must show how you worked out your answer. [3 + 2 OCW]

20

1, 20

2, 10

4, 5

1 + 2 + 4 = 7 X

2 + 4 + 5 = 11 ✓

Charlotte 2, 4, 5

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4. The number of points scored by the Welsh rugby team in their 9 games during the 2014-2015 season were as follows:

28 17 16 12 16 26 20 23 61

(a) Find the mode of the number of points scored. [1]

Mode = 16 (most frequently occuring number)

(b) Find the median number of points scored. [2]

12, 16, 16, 17 | 20 | 23, 26, 28, 61

Median = 20

(c) Find the mean number of points scored. [3]

28 + 17 + 16 + 12 + 16 + 26 + 20 + 23 + 61 = 219

mean = $219 \div 9 = \frac{73}{3} \approx 24.3$ (3 s.f.)

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5. *(a)* Circle the correct answer for the following statement. [1]

$5a + 4a - a$ can be simplified as

$9a - a$

$8a$

9 $\quad 5a + 4$ $\quad 8a$ $\quad 8$ $\quad 9a$

(b) A linear sequence of numbers is shown below.
Two of the numbers are missing.

$7 - 3 = 4$

19, $\underline{15}$, $\underline{11}$, 7, 3

+4 +4 +4 −4

Fill in the missing numbers in the sequence.
Write down the rule for finding the next term in the sequence. [2]

Rule: Subtract 4 each time

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6. A sixth number is to be added to the list below.

12 6 15 3 5

When the sixth number is added, the range increases by 2.

Write down the two possible values for the sixth number.
You must show all your working.

range = highest − lowest

[3]

Current range = 15 − 3 = 12

If range increases by 2, 3 stays as lowest but highest will now be 17

New range => 17 − 3 = 14

If 15 stays as highest and lowest decreases by 2

lowest is now 1

New range => 15 − 1 = 14

Two possible values for 6th number are 1 and 17

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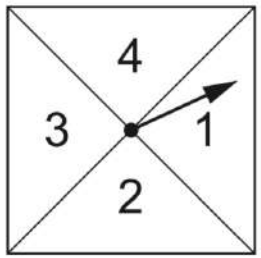
7. *(a)* Gareth is running a game stall at his school fete.
In his game, a player must flip a coin and spin a fair 4-sided spinner.
The sections of the spinner are labelled 1, 2, 3 and 4, as shown below.



(i) Write down all the possible outcomes.
One has been done for you. [2]

Head, 1 Head, 2 Head 3 Head, 4
Tail, 1 Tail, 2 Tail, 3 Tail, 4

(ii) A player wins a prize if the coin lands on tails and the spinner shows the number 4.
Azi plays the game once.

What is the probability that Azi wins a prize? [2]

(i) Write down all the possible outcomes.
One has been done for you. [2]

Head, 1 H2 H3 H4

T1 T2 T3 T4

(ii) A player wins a prize if the coin lands on tails and the spinner shows the number 4.
Azi plays the game once.

What is the probability that Azi wins a prize? [2]

P(4 and Tail) = 1/8

(b) Cerys says:

"The chance of throwing a three on an ordinary 6-sided dice is higher than the chance of throwing a six, because six is the hardest number to get."

Is Cerys correct?
Explain your reasoning fully. [1]

This is incorrect because the probability of a Six is 1/6 and so is the probability of 3. All numbers on dice have equal probability of 1/6

Examiner only

8. Using only the numbers in the following list,

57 58 59 60 61 62 63 64 65

write down

(a) a prime number, [1]

59

(b) a cube number, [1]

$4^3 = 64$ 64

(c) a factor of 186, [1]

$186 \div 3 = 62$ 62

(d) a multiple of 7·25. [1]

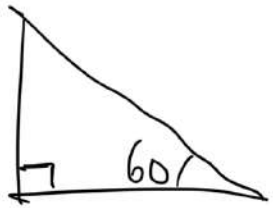
$7.25 \times 8 = 58$ 58

9. Circle the correct answer for each of the following statements.

(a) One angle in a right-angled triangle is 60°.
One of the other angles must be

180° ~~30°~~ 120° ~~60°~~ 360°. [1]

9. Circle the correct answer for each of the following statements.



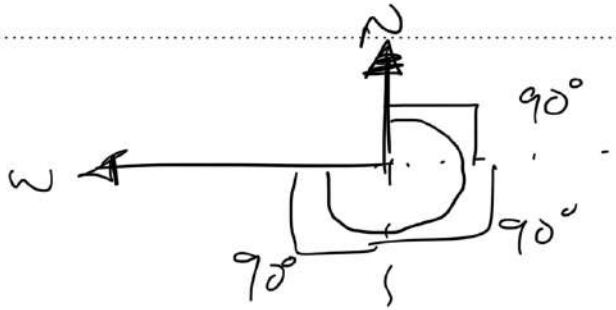
(a) One angle in a right-angled triangle is 60°.
One of the other angles must be

180° **30°** 120° 60° 360°. [1]

180 - 60 - 90 = 30°

(b) Huw is facing North.
He turns **clockwise** until he is facing West.
He has turned through an angle of

270° 3° 90° 0·75° 9°. [1]



3 x 90 = 270°

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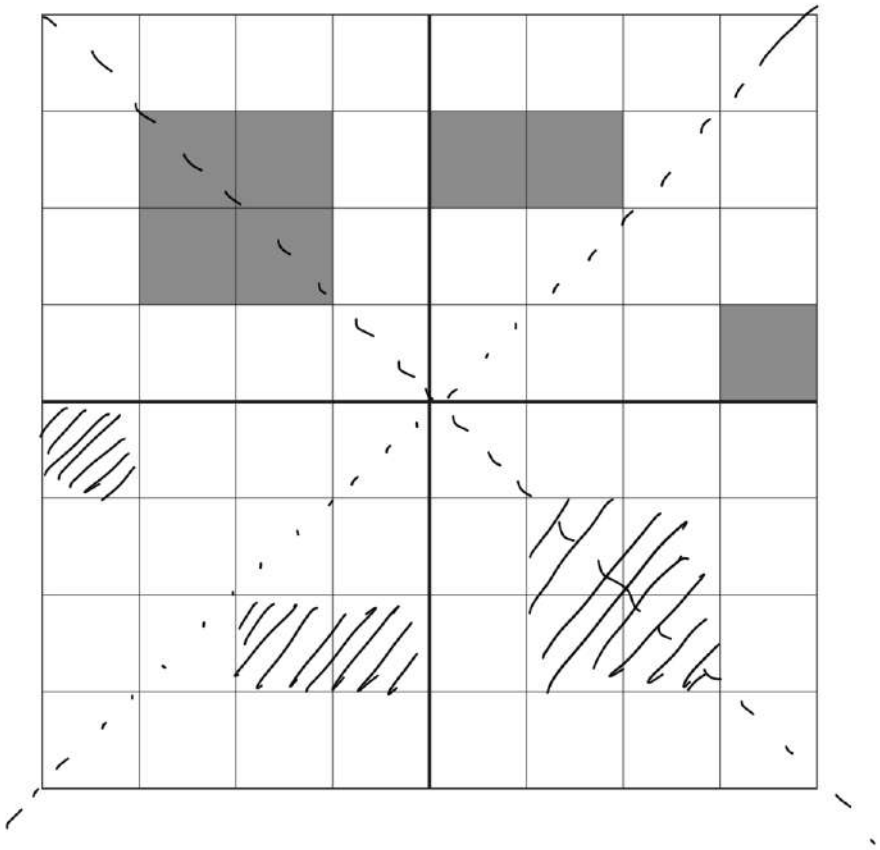
10. Shade the least number of squares in the lower two quadrants so that the grid has rotational symmetry of order 2. [3]



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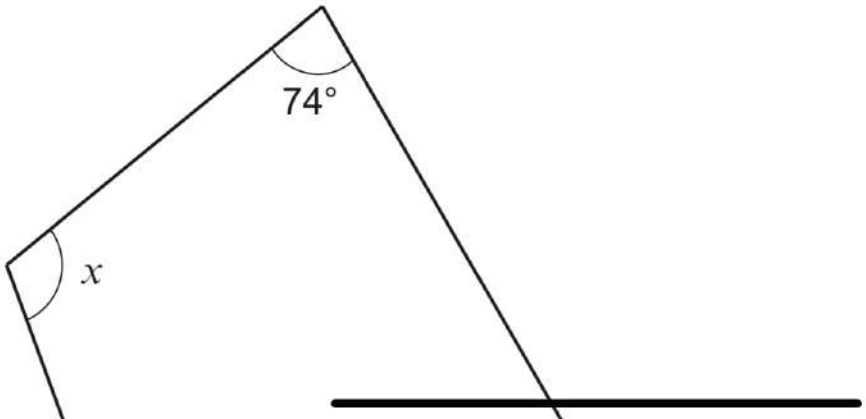

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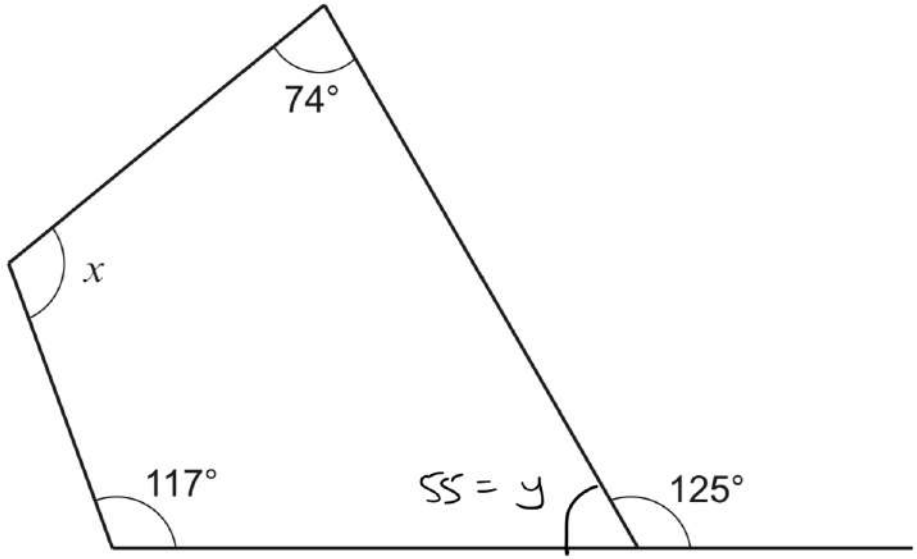

Diagram not drawn to scale

Find the size of the angle x. [3]

$y + 125 = 180$ Sum of interior angles in a quadrilateral (4 sided shape)
$-125 \quad -125$
$y = 55$ $= 360°$

$x + 74 + 117 + 55 = 360$
$x + 246 = 360$
$-246 \quad -246$
$x = 114$

$x =$ 114 °

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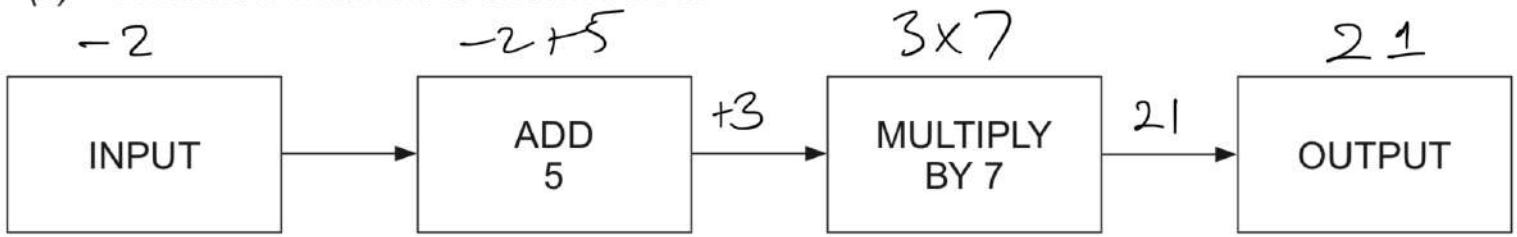
12. *(a)* Solve the equation $3x - 2 = 10$. [2]

$+2 \quad +2$

$\frac{3x}{3} = \frac{12}{3}$

$x = 4$

(b) A number machine is shown below.



Calculate the OUTPUT when the INPUT is −2. [1]

21

(c) Expand $2(x + 3)$. [1]

$2 \times x \quad 2 \times 3$

$2x + 6$

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13. **Show clearly** whether the following statement is true or false. [4]

'If you increase a positive number by 10% and then decrease that new value by 10%, you get back to your original number.'

Let's assume original number = x

$100\% + 10\% = 110\% = \frac{110}{100} = 1.10$

Increase x by 10% $\Rightarrow 1.10x$ (New Value)

Decrease by 10% : $100\% - 10\% = 90\% = \frac{90}{100} = 0.9$

Decrease $1.10x$ by 10% $\Rightarrow 0.9 \times 1.10x = 0.99x$

$0.99x \neq x$ hence the statement is false, because you do not get back to your original number.

14. Circle either TRUE or FALSE for each statement given below. [2]

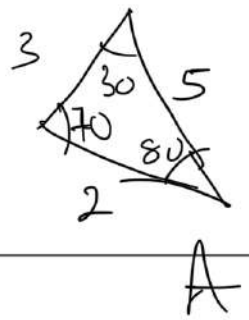
STATEMENT	

14. Circle either TRUE or FALSE for each statement given below. [2]

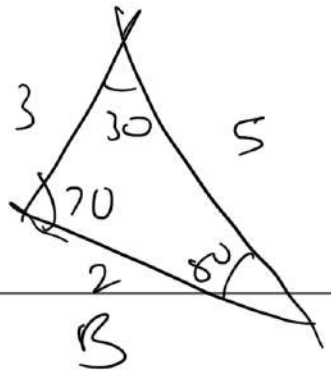
STATEMENT		
All equilateral triangles are congruent.	TRUE	FALSE
All squares with equal areas are congruent.	TRUE	FALSE
Circles with equal perimeters are congruent.	TRUE	FALSE
All regular octagons are congruent.	TRUE	FALSE

Congruence means equal angles and sides/side length dimensions

* Not drawn to scale



A



B

A and B are congruent

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AA
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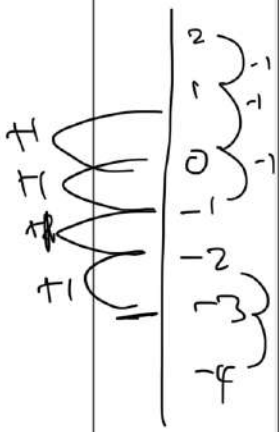
15. Complete each row of the following table.
The first row has been done for you. [3]

Place	Temperature at midday	Change	Temperature at following midday
Holyhead	−1°C	Up 3°C	2°C
Dolgellau	−3°C	up 4°C	1°C
Cardigan	2°C	Down 3°C	−1°C
Newport	−4°C	Up 2°C	−2°C



16. A square has a perimeter of 80 cm.
A circle fits exactly inside the square, as shown in the diagram.

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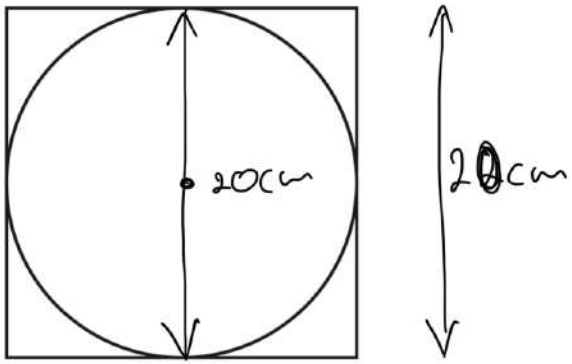
16. A square has a perimeter of 80 cm.
A circle fits exactly inside the square, as shown in the diagram.



Calculate the circumference of the circle.
Give your answer correct to 1 decimal place.
You must show your working. [4]

Perimeter of Square = $L+L+L+L = 4L$

$\frac{80}{4} = \frac{4L}{4}$

$20\text{cm} = L$

Diameter = 20cm

Circumference of circle = $\pi \times$ Diameter

$= \pi \times 20$

$= 20\pi$ cm

Circumference of Circle = 62.8 cm

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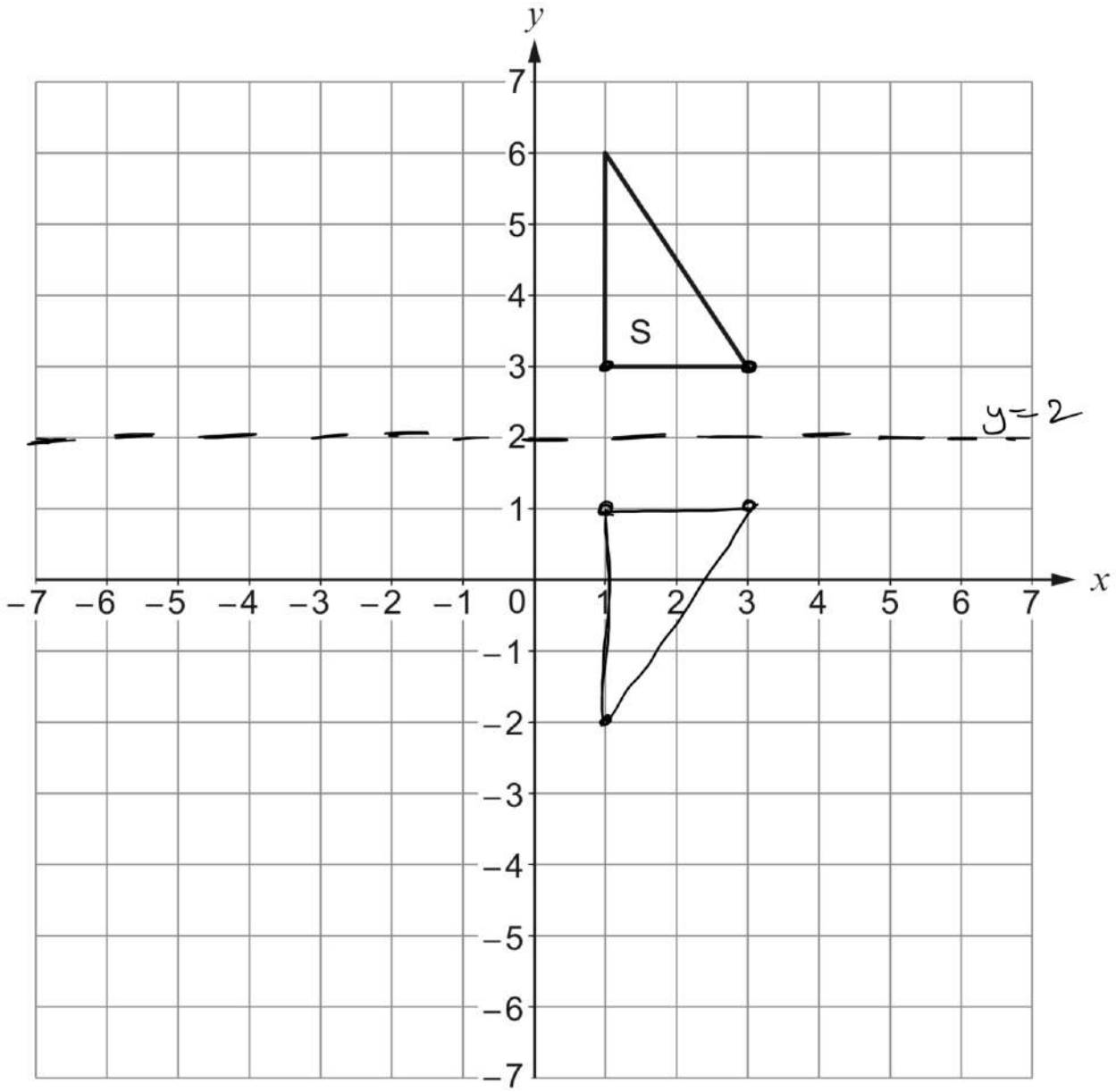
17. *(a)* Reflect the triangle S in the line $y = 2$. [2]



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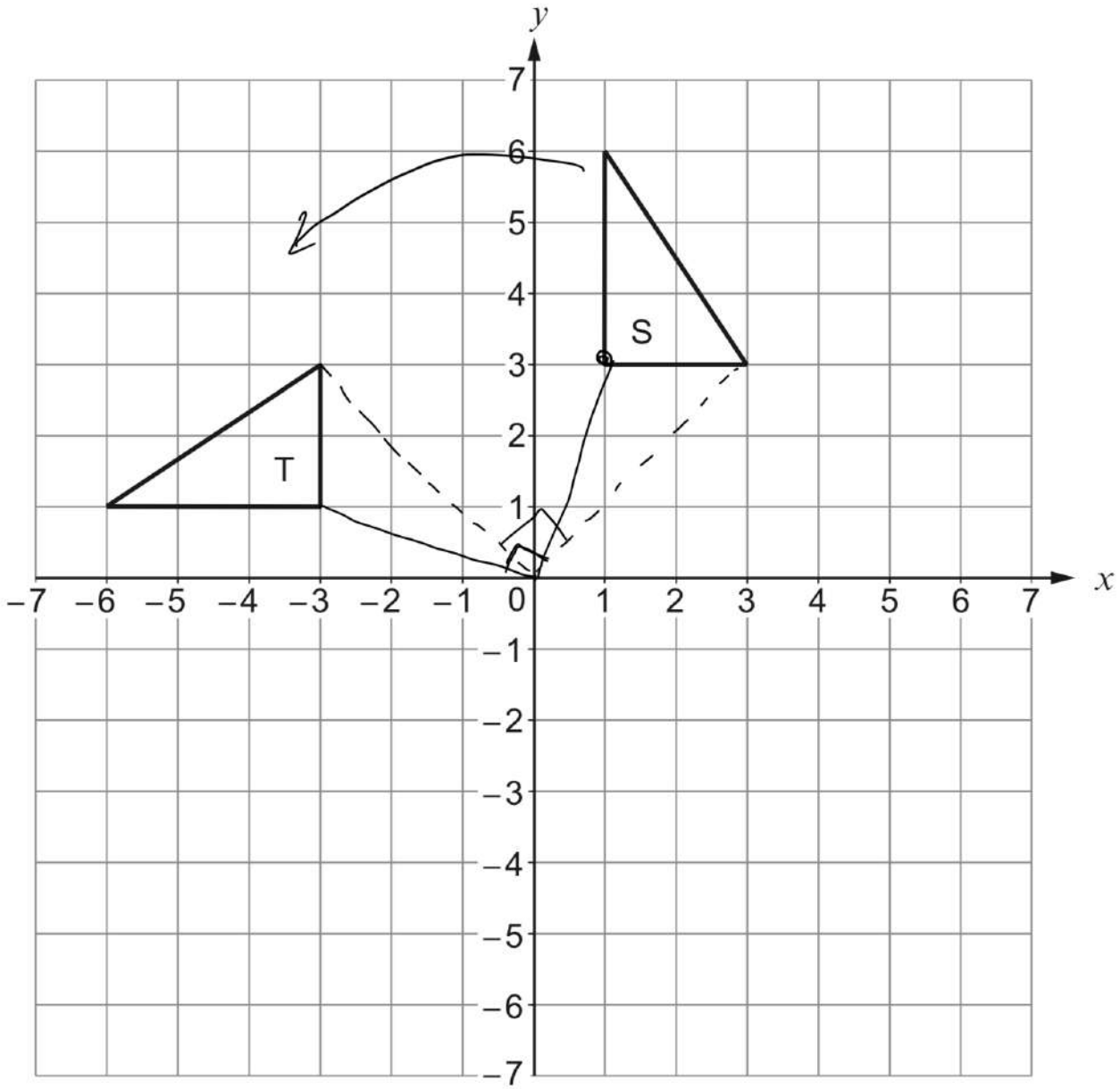
(b) Describe fully a single transformation that transforms triangle S onto triangle T. [3]



Anticlockwise rotation of 90° about the origin