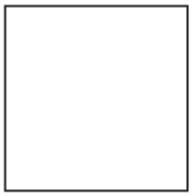
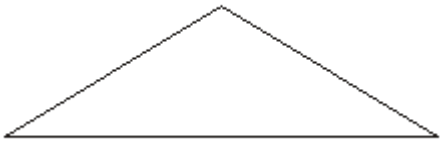
Q1. Here are four shapes.

A

B



C



D

Write down the letter of the shape which has

(i) exactly **one** line of symmetry,

.....

(ii) **no** lines of symmetry,

.....

(iii) exactly **two** lines of symmetry.

.....

(Total 3 marks)

Q2. Here are five shapes.

A B C D E

Write down the letter of a shape that has

(i) **no** lines of symmetry,

.....

(ii) exactly **one** line of symmetry,

.....

(iii) exactly **two** lines of symmetry,

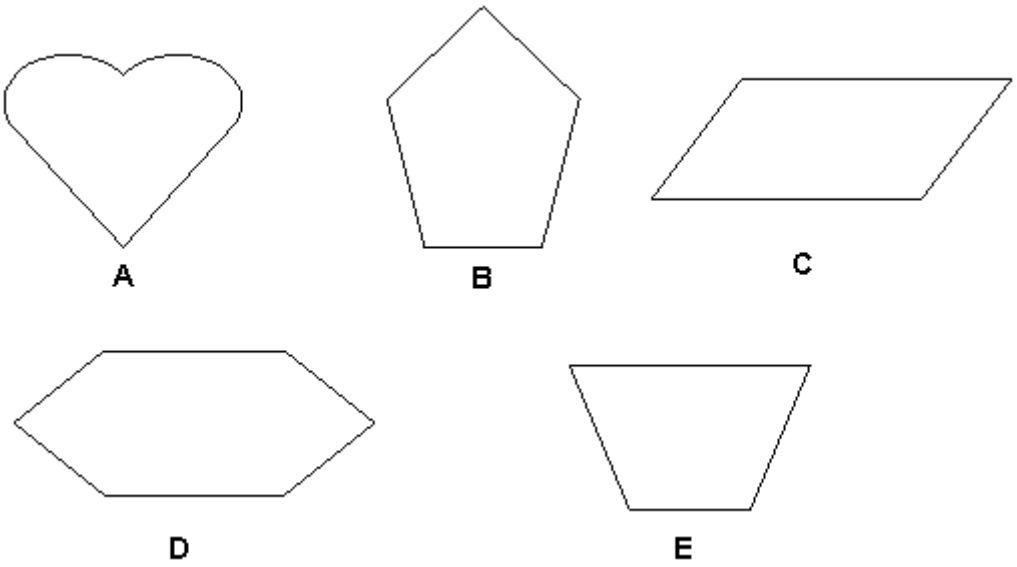
.....

(iv) rotational symmetry of order two.

.....

(Total 4 marks)

Q3. Here are five shapes.



One of these shapes is a parallelogram.

(a) Write down the letter of this shape.

.....

(1)

One of these shapes has exactly **two** lines of symmetry.

(b) Which shape?

.....

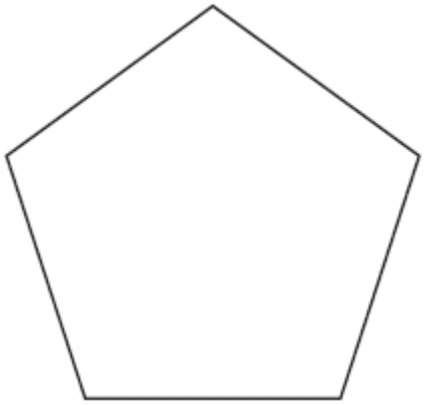
(1)

(c) Write down the order of rotational symmetry of shape **C**.

.....

(1)
(Total 3 marks)

Q4. Here is a regular pentagon.



(a) What is the order of rotational symmetry of this pentagon?

.....

(1)

(b) Draw a line of symmetry on this pentagon.

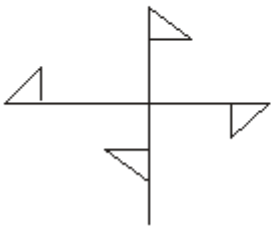
(1)
(Total 2 marks)

Q5. (a) Draw all the lines of symmetry of this shape.

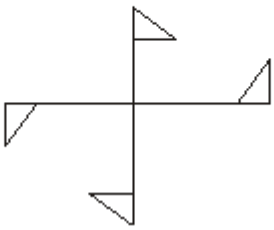
(1)

(b) Which of these shapes has rotational symmetry?

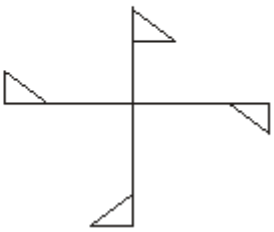
A



B



C

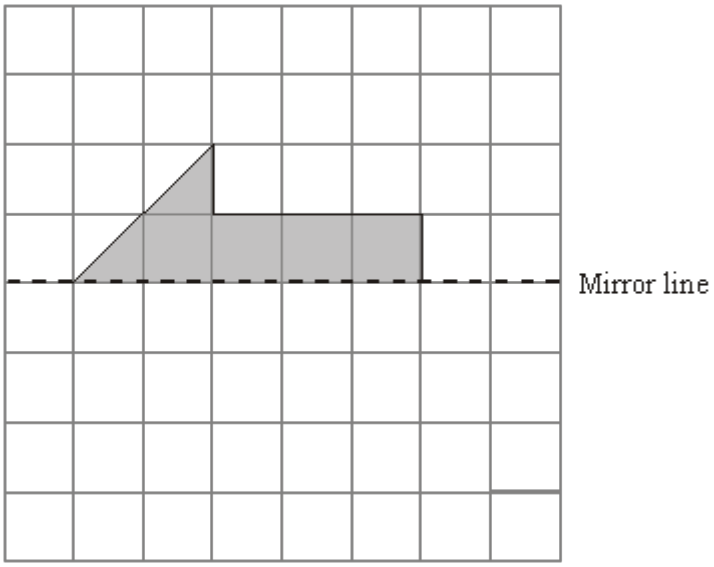


(1)

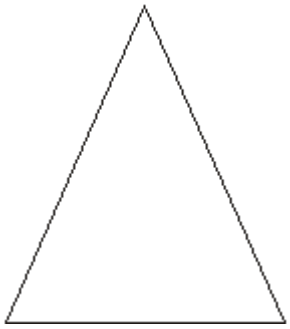
(c) In the space below, draw a shape that has line symmetry and rotational symmetry order 3.

(2)
(Total 4 marks)

Q6.



(a) Reflect the shaded shape in the mirror line.

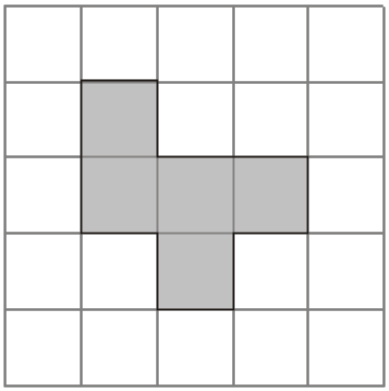


(1)

(b) Draw the line of symmetry on this triangle.

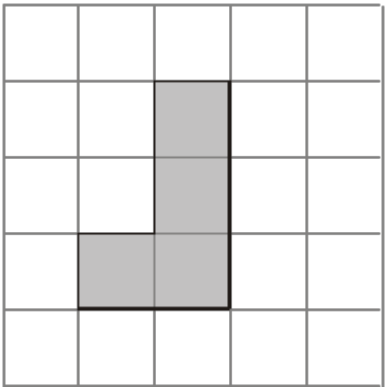
(1)
(Total 2 marks)

Q7. (a) On the diagram below, shade **one** square so that the shape has exactly **one** line of symmetry.



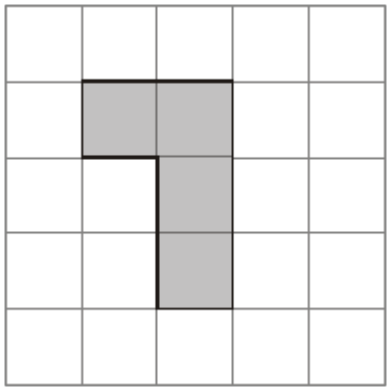
(1)

(b) On the diagram below, shade **one** square so that the shape has rotational symmetry of order 2



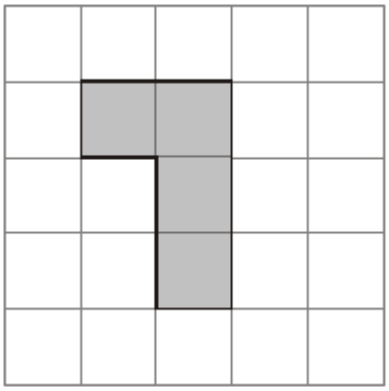
(1)
(Total 2 marks)

Q8. (a) Shade **one** more square to make a pattern with 1 line of symmetry.



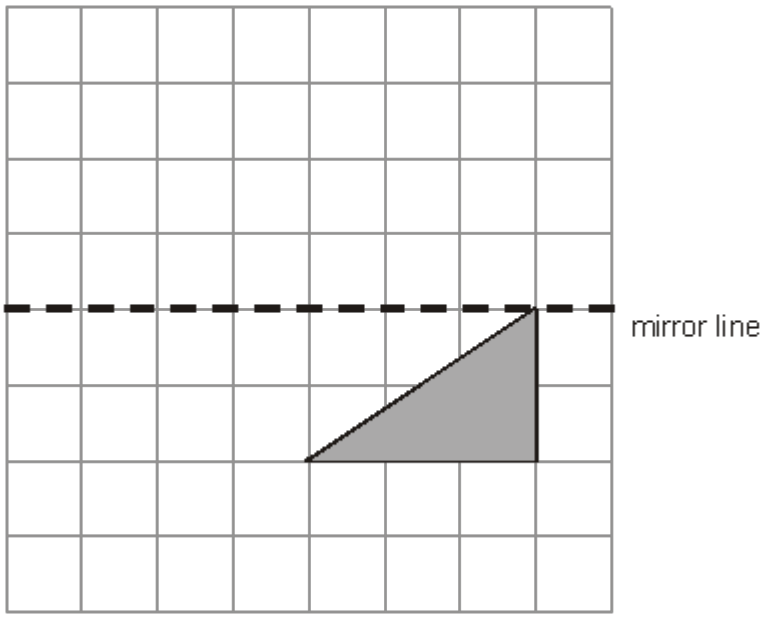
(1)

(b) Shade **one** more square to make a pattern with rotational symmetry of order 2



(1)
(Total 2 marks)

Q9.



(a) Reflect the shaded shape in the mirror line.

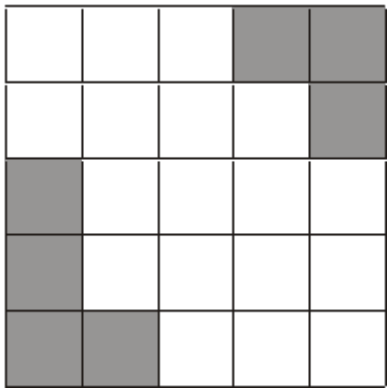
(1)

Here is a pattern made with squares.

(b) Shade one square to make a black and white pattern with only **one** line of symmetry.

(1)

Here is another pattern made with squares.



(c) Shade **three** more squares to make a pattern with rotational symmetry of order 2.

(1)

(Total 3 marks)

M1.

	Answer	Mark	Additional Guidance
(i)	D	3	**B1** cao
(ii)	B		**B1** cao
(iii)	A		**B1** cao
			Total for Question: 3 marks

M2.

	Answer	Mark	Additional Guidance
(i)	E or C	1	**B1** for E or C or both
(ii)	B	1	**B1** cao
(iii)	A	1	**B1** cao
(iv)	C or A	1	**B1** for C or A or both
			Total for Question: 4 marks

M3.

	Answer	Mark	Additional Guidance
(a)	C	1	**B1** cao
(b)	D	1	**B1** cao
(c)	2	1	**B1** cao
			Total for Question: 3 marks

M4.

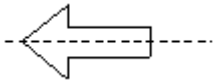
	Answer	Mark	Additional Guidance
(a)	5	1	**B1** cao
(b)	Line of symmetry	1	**B1** for line of symmetry
			Total for Question: 2 marks

M5.

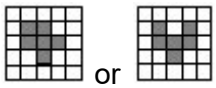
	Working	Answer	Mark	Additional Guidance
(a)		Vertical and horizontal lines of symmetry only	1	**B1** cao (– 1 for extra lines drawn)
(b)		B	1	**B1** cao
(c)		Eg. Equilateral triangle	2	**B2** for any shape satisfying both criteria [B1 for a shape with rotation al symmetry of

				order 3 with no line symmetry]
				Total for Question: 4 marks

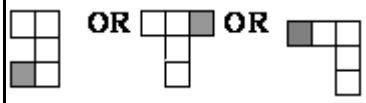
M6.

	Answer	Mark	Additional Guidance
(a)		1	**B1** for completed shape cao
(b)		1	**B1** for line of symmetry drawn
			Total for Question: 2 marks

M7.

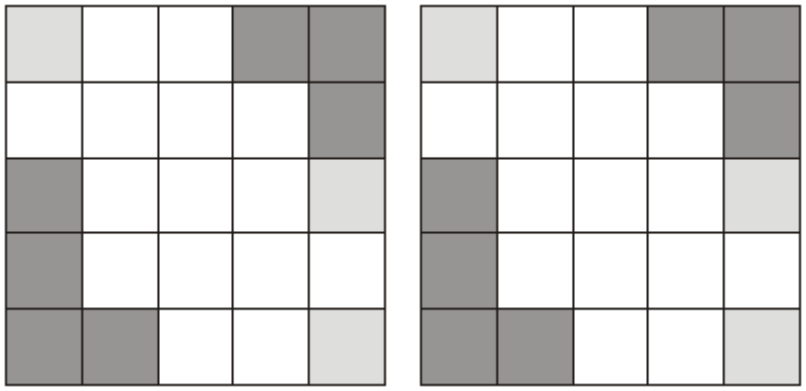
	Answer	Mark	Additional Guidance
(a)	 or	1	**B1** cao
(b)		1	**B1** cao
			Total for Question: 2 marks

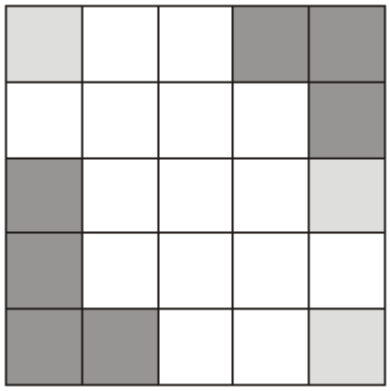
M8.

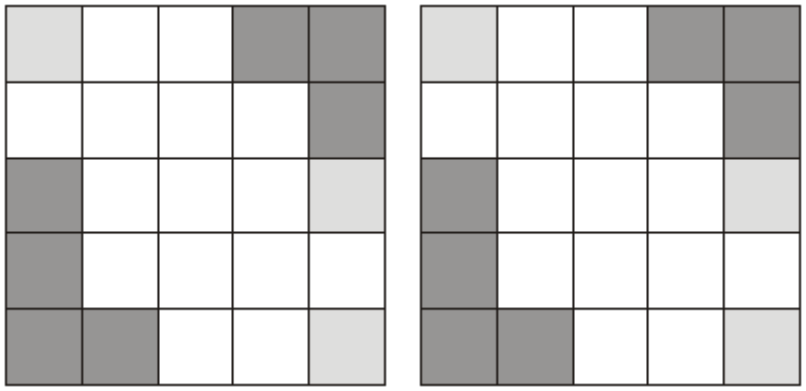
	Answer	Mark	Additional Guidance
(a)	Shading	1	**B1** for one square shaded to get one of 
(b)	Shading	1	**B1** for one square shaded to get
			Total for Question: 2 marks

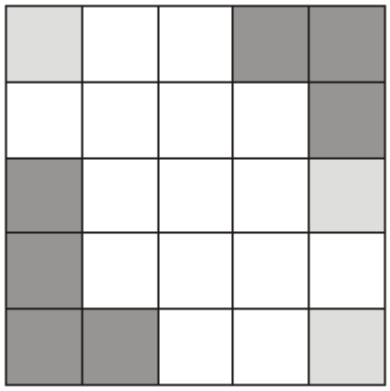
M9.

	Working	Answer	Mark	Additional Guidance
(a)		Correct reflection	1	**B1** cao
(b)		Correct square	1	**B1** cao
(c)	See pattern at end	Correct square	1	**B1** cao
				Total for Question: 3 marks









E1. Most parts of this question were well attempted, but parts (i) and (ii) were sometimes confused.

E2. Parts (i) and (ii) were done well by virtually all the candidates. Part (iii) was done well. Common incorrect answers here were D and C.

Only about half the candidates were able to get part (iv) correct. A common incorrect answer here was B.

##

This was a question which tested geometrical knowledge. For many all three marks were gained.

##

In part (a) it was disappointing to see so many numbers other than “5” given; understanding of the technical term “order” is clearly a weakness. In part (b), however, most candidates gave the correct line. Where the mark was lost this was usually when candidates attempted to draw many lines, and in so doing gave some which were not symmetrical to the shape.

E6. Only a few candidates failed to reflect the shaded shape correctly in part (a) and most drew the correct line of symmetry in part (b). Occasionally this line was drawn very carelessly and the mark could not be awarded.

E7. Over 80% of candidates were able to shade one square so that the shape had exactly one line of symmetry. A few candidates created a shape with rotational symmetry of order 2. Part (b) was less well attempted with a substantial proportion of candidates creating a shape with line rather than rotational symmetry. Only about a half of candidates were successful in this part.

E8. **Specification A**

Part (a) was answered correctly by the majority of candidates. Part (b) was less well done, with some candidates trying to identify a further case of reflective symmetry. A significant minority of students answered (a) and (b) the wrong way around.

Specification B

Adding a square to achieve a pattern with one line of symmetry and a pattern with rotational symmetry of order two appeared to be well understood and with over 60% getting both fully correct. The most common error was to reverse the question with the solution to (a) appearing in (b) and vice-versa.