Name:

Exam Style Questions

Line Symmetry
Rotational Symmetry

Corbettmaths

Equipment needed: Pen, Pencil, Ruler

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

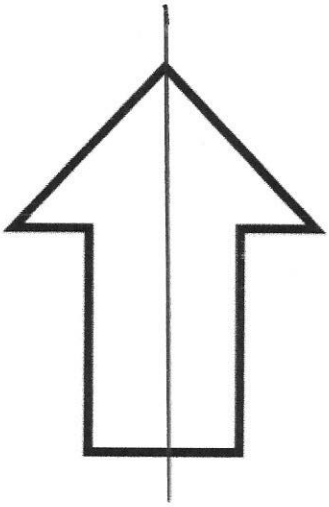
Video Tutorial

www.corbettmaths.com/contents

Videos 316, 317

Answers and Video Solutions

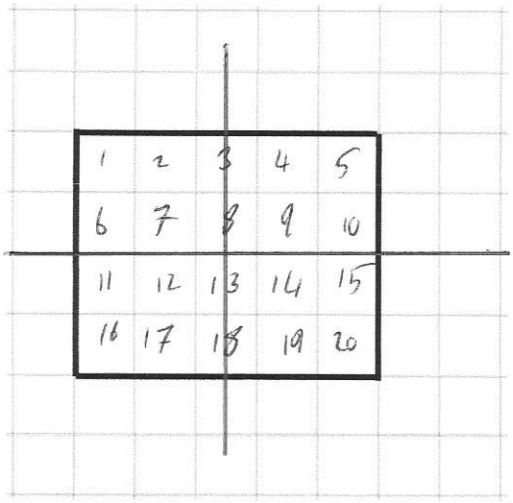
1. An arrow is drawn below.



Draw all the lines of symmetry on this shape.

(1)

2. A rectangle is drawn on a centimetre grid.



(a) Draw the lines of symmetry on the rectangle.

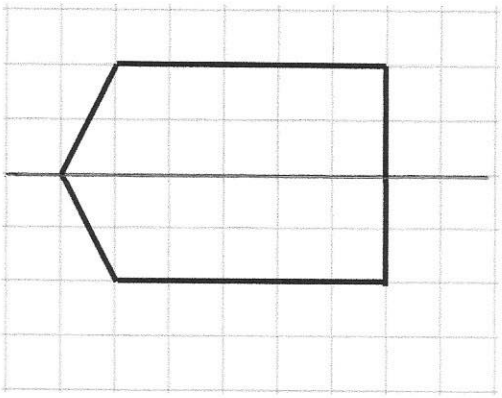
(1)

(b) Find the area of the rectangle.

20 .....cm²

(1)

3. A polygon is drawn on the grid below.



(a) Circle the name of the polygon.

Quadrilateral Octagon Pentagon Hexagon

(1)

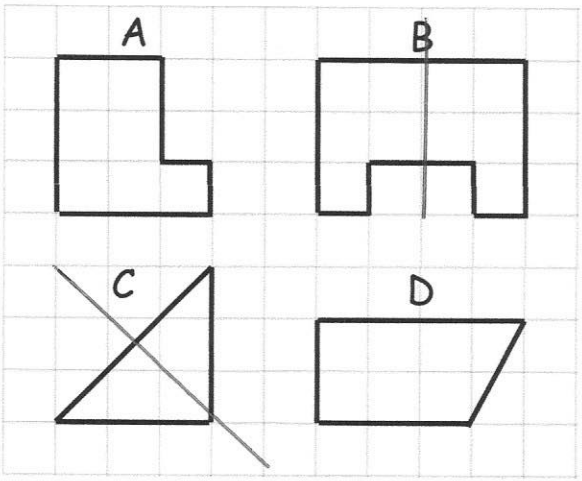
(b) How many lines of symmetry does the polygon have?

1

.....

(1)

4. Shown below are 4 shapes.

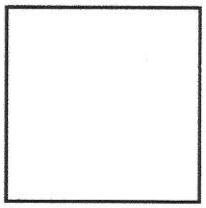


Which two shapes have a line of symmetry?

B and C

(1)

5.



Circle the order of rotational symmetry of a square.

1 2 4 8

(1)

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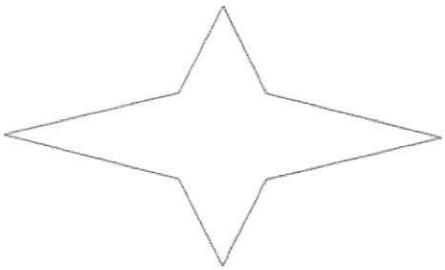
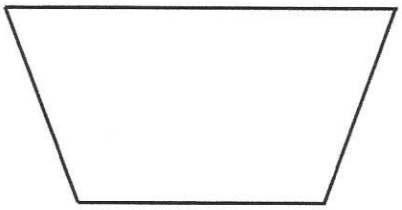
6. For each shape write down the number of lines of symmetry and the order of rotational symmetry.



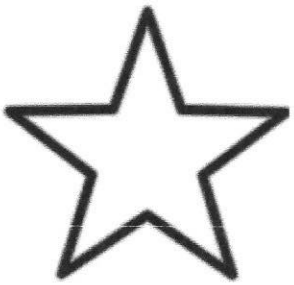
Lines of symmetry 2

Rotational symmetry order 2



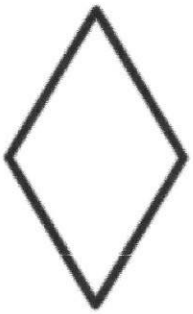
Lines of symmetry 1

Rotational symmetry order 1



Lines of symmetry 5

Rotational symmetry order 5

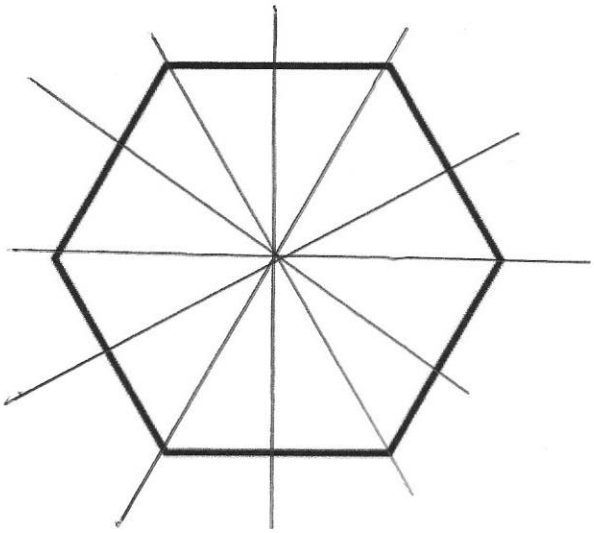


Lines of symmetry 2

Rotational symmetry order 2

(4)

7. The diagram below shows a regular hexagon.



(a) Write down the order of rotational symmetry of the hexagon.

6

(1)

(b) On the diagram draw in all the lines of symmetry.

(2)

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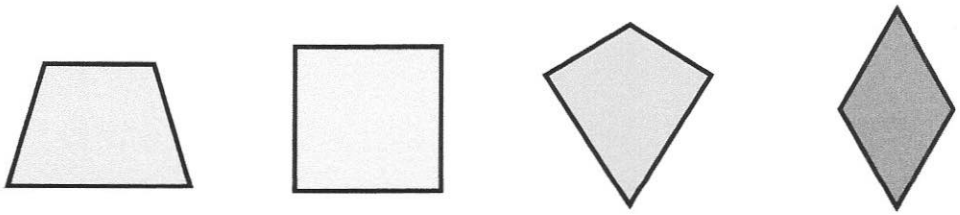
8. Shown below are 4 shapes.



A B C D

(a) Write down the mathematical name of shape C

kite

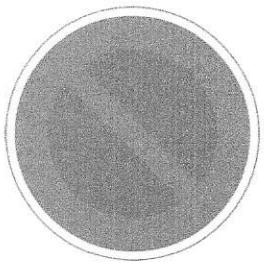
(1)

(b) Which shape has rotational symmetry of order 2.

D

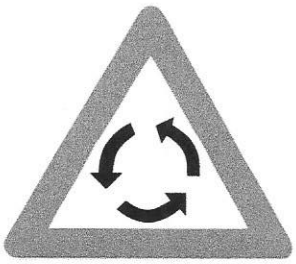
(1)

9. For each road sign write down the number of lines of symmetry and the order of rotational symmetry.



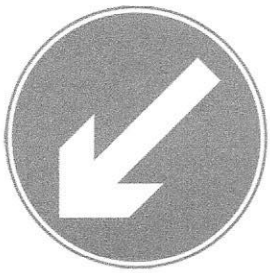
Lines of symmetry 2

Rotational symmetry order 2



Lines of symmetry 0

Rotational symmetry order 3

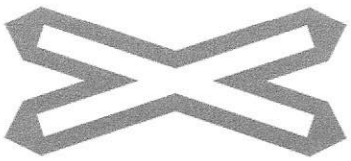


Lines of symmetry 1

Rotational symmetry order 1

Lines of symmetry 1

Rotational symmetry order 0



Lines of symmetry 2

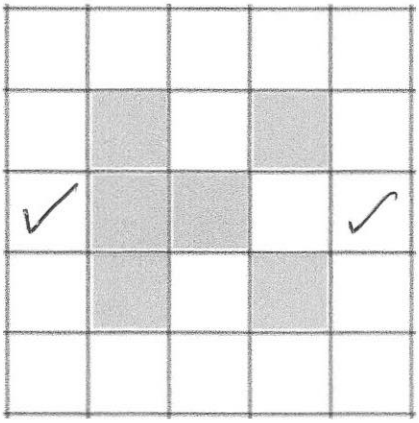
Rotational symmetry order 2

Lines of symmetry 2

Rotational symmetry order 2

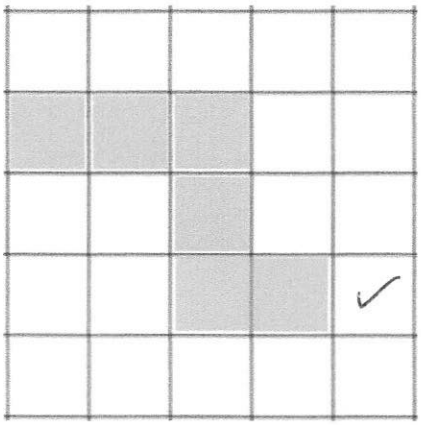
(6)

10.



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

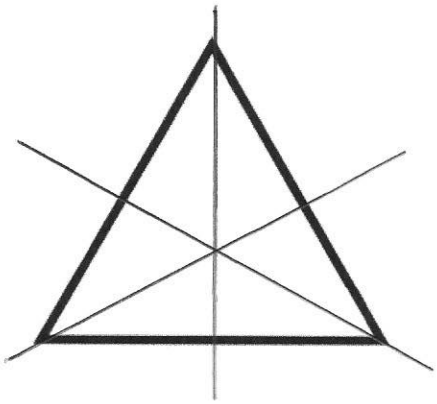
(1)



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

(1)

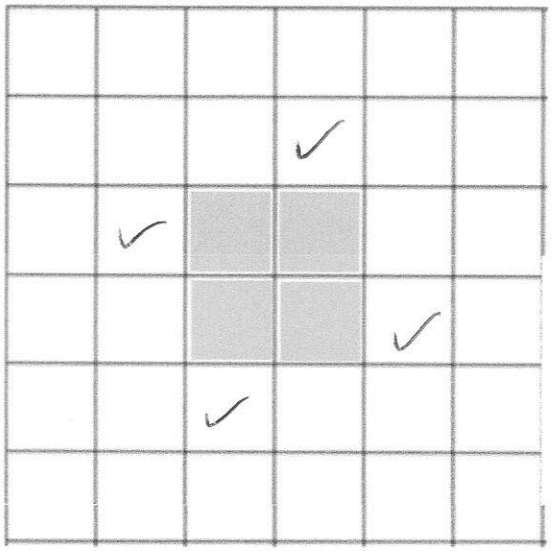
11. (a) An equilateral triangle is drawn below.



Draw all the lines of symmetry.

(2)

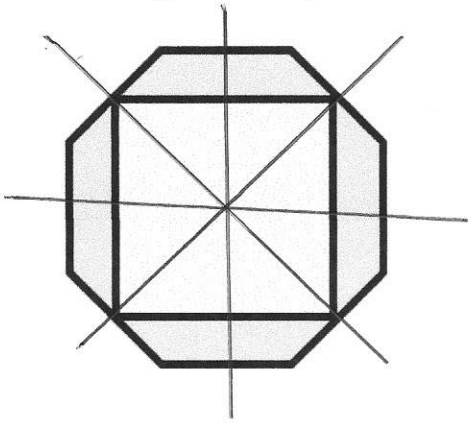
(b) Four small squares are shaded in the diagram below.



Shade in four more small squares to make a pattern with rotational symmetry order 4.

(2)

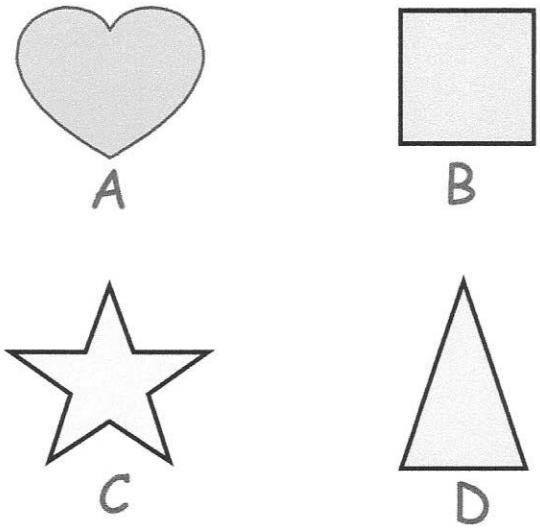
12. A square is drawn inside of a regular octagon.



Draw all the lines of symmetry on this shape.

(1)

13. Here are some shapes.

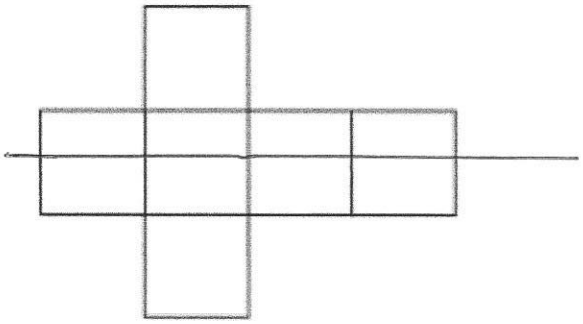


In the table write down the rotational symmetry for each shape.

Shape	A	B	C	D
Order of rotational symmetry	1	4	5	1

(2)

14. The diagram shows the net of a solid shape.



(a) What is the name of the solid?

Cube

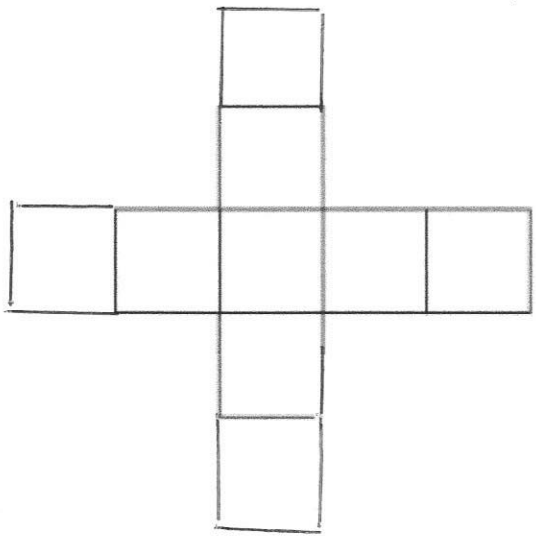
(1)

(b) The net has one line of symmetry.
Draw the line of symmetry on the diagram.

(1)

(c) Add some more squares to the diagram below so it has rotational symmetry of order four.

(1)



15. Shane draws a triangle.

He says "the triangle has exactly two lines of symmetry."

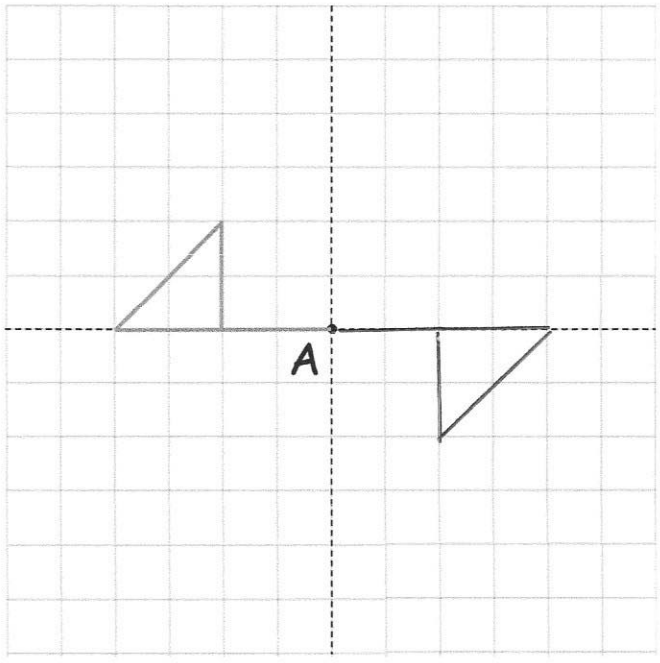
Explain why Shane is incorrect.

It is not possible.

Equilateral triangles have 3 lines of symmetry.
Isosceles triangles have 1 line of symmetry.
Scalene triangles have 0 lines of symmetry.
Right-angled triangles have 0 or 1 line of symmetry.

(2)

16.



Complete the diagram above so that it has rotational symmetry order 2 about centre A.

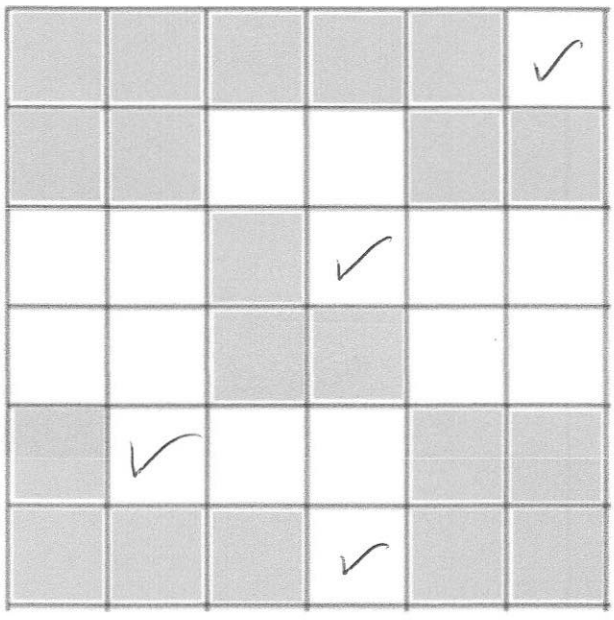
(1)

17. Complete the table below to show the symmetry properties of quadrilaterals.

	Exactly 1 line of symmetry	Rotational symmetry of order 2
Rectangle	X	✓
Square	X	X
Kite	✓	X
Rhombus	X	✓

(3)

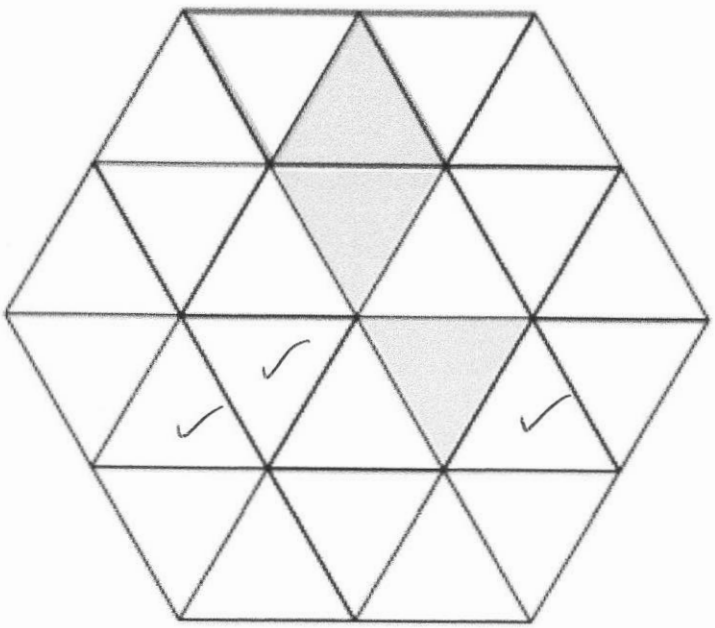
18.



Shade in the fewest possible squares to make a pattern with 2 lines of symmetry.

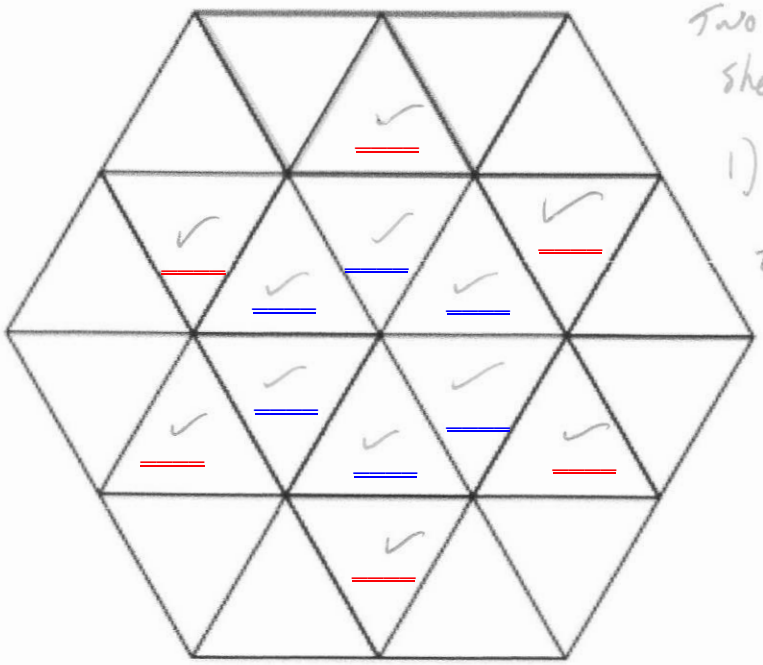
(2)

19. (a) Shade three more triangles to make a pattern with rotational symmetry order 3.



(2)

(b) Shade six triangles to make a pattern with rotational symmetry order 6.



Two possible solutions shown:

1) blue ticks

2) Red ticks

(2)