



## MATHS

## **BOOKS - SWAN PUBLICATION**

## SYMMETRY

Exercise 14 1













### figures





### figures



### figures





figures





9. Draw all lines of smmetry if any in each of

the following figures.





10. Draw all lines of smmetry if any in each of

the following figures.





### **11.** Find x in the following figures.



**12.** Draw all lines of smmetry if any in each of the following figures.



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**25.** In the following figures, the mirror line (i.e., the line of symmetry) isgiven as a dotted line. Complete each figure performing reflection in

the dotted (mirror) line. (You might perhaps place a mirror along the dotted line and look into the mirror for the image). Are you able to recall the name of the figure you complete?





**26.** In each of the following figures, the mirror line (i.e, the line of symmetry) is given as dotted line. Complete each figure performing reflection in the dotted (mirror) line. (You might perhaps place a mirror along the dotted line and look into the mirror for the image). Are you able to recall the name of figure you



**27.** In the following figures, the mirror line (i.e., the line of symmetry) isgiven as a dotted line. Complete each figure performing reflection in the dotted (mirror) line. (You might perhaps place a mirror along the dotted line and look into the mirror for the image). Are you able to recall the name of the figure you complete?





**28.** In each of the following figures, the mirror line (i.e, the line of symmetry) is given as dotted line. Complete each figure performing reflection in the dotted (mirror) line. (You might perhaps place a mirror along the dotted line and look into the mirror for the image). Are you able to recall the name of figure you

### complete.





### 29. Draw the reflection of the following letter

in the given mirror line.



**30.** Draw the reflection of the following letter

in the given mirror line.



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**31.** Copy each diagram on a squared paper and

complete each shape to be symmetrical about

### the mirror lies shown dotted





32. Copy each diagram on a squared paper and

complete each shape to be symmetrical about

the mirror lies shown dotted



**33.** State the number of lines of symmetry for

the following figures:

A scalene triangle

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34. State the number of lines of symmetry for

the following figures:

A rectangle
**35.** State the number of lines of symmetry for

the following figures:

A rhombus

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36. State the number of lines of symmetry for

the following figures:

A parallelogram

37. State the number of lines of symmetry for

the following figures:

A regular hexagon



38. The number of lines of symmetry of the

square are:.

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**Exercise 14 1 Multiple Choice Questions** 

**1.** Which of the following triangles have no line of symmetry ?

A. an equalateral triangle

B. An Isosceles triangle

C. A scalene triangle

D. All of above

Answer: c

**2.** What is the other name for a line of symmetry of a circle ?

A. Ab are

B. sector

C. A diameter

D. A radius

Answer: c

3. How many lines of symmetry does a regular

polygon have?

A. Infinitely many

B. As many as its sides

C. One

D. Zero

Answer: b

**4.** In the given figure, the dotted line is the line of symmetry, which figure is formed if the given figure is reflected in the dotted line ?



A. Square

B. Rhombus

C. Triangle

D. Pentagon

### Answer: b



5. What is other name for a line of symmetry

of an Isosceles triangle?

A. Side

B. Median

C. Radius

D. Angle

### Answer: b



# 6. Which of the following alphabets has a

vertical line of symmetry ?

A. M

B.Q

C. E

D. B

Answer: a



7. Which of the following alphabets has a

horizontal line of symmetry ?

A. C

B. D

C. K

D. All of above

#### Answer: d



# 8. Which of the following alphabets has no line

of symmetry ?

A. A

B. B

C. P

D. 0

#### Answer: c





1. Write the order of rotation for the following

figures.



# 2. Write the order of rotation for the following

figures.







# 4. Write the order of rotation for the following

## figures.



**5.** Specify the centre of rotation, direction of rotation, angle of rotation and order of

rotation for the following.



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**6.** Specify the centre of rotation, direction of rotation, angle of rotation and order of rotation for the following.



**7.** Specify the centre of rotation, direction of rotation, angle of rotation and order of rotation for the following.



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8. Which of the following figures have rotational symmetry about the marked point (  $\times$  ) give the angle of rotation and order of

## the rotation of the figures.















**1.** The angle of rotation in an equilateral triangle is :

A.  $60^{\,\circ}$ 

- B.  $70^{\circ}$
- C.  $90^{\circ}$
- D.  $120^{\circ}$

#### Answer: D

2. A square has a rotational symmetry of order

4 about its centre, What is the angle rotation

?

A.  $45^{\circ}$ 

B.  $90^{\circ}$ 

C.  $180^{\circ}$ 

D.  $270^{\circ}$ 

Answer: B



**3.** Which is the order of rotational symmetry of

the English alphabet Z ?

A. 0

B. 1

C. 2

D. 3

#### Answer: C



**4.** Which of these letters has only rotational symmetry ?

A. S

**B.** E

С. В

D. P

Answer: A

## 5. If the smallest angle of rotation is $90^\circ$ then

order of symmetry is ?

- A. 1
- B. 3
- C. 4
- D. 2

#### Answer: C

**1.** In the following figures, find the number of lines of symmetry and angle of rotation for rotational symmetry.





**2.** In the following figures, find the number of lines of symmetry and angle of rotation for rotational symmetry.



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3. Name any two figures that have both line

symmetry and rotational symmetry.



**4.** If a figure has two or more lines of symmetry, should it have rotational symmetry of order more than 1

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5. Following shapes have both, line symmetry and rotational symmetry. Find the number of lines of symmetry, centre of rotation and order

## of rotational symmetry.





6. Following shapes have both, line symmetry and rotational symmetry. Find the number of lines of symmetry, centre of rotation and order

## of rotational symmetry.



7. Following shapes have both, line symmetry and rotational symmetry. Find the number of lines of symmetry, centre of rotation and order

#### of rotational symmetry.





**8.** Some of the English alphabets have fascinating symmetrical structures. Which capital letters have just one line of symmetry

(Like E) ? Which capital letters have a rotational symmetry of order 2 (Like I) ? By attempting to think on such lines, you will be able to fill in the following table.

English Alphabet	Line Symmetry	Number of lines Symmetry	Rotational Symmetry	Order of Rotational symmetry
Z	No		Yes	
S		0		2
н		2		
Ò	Yes			4
Е	Ýes	1		
N			Yes	
С	Yes	•		1

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**Exercise 14 3 Multiple Choice Questions** 

**1.** If  $60^{\circ}$  is the smallest angle of rotation for a given figure what will be the angle of rotation for same figure ?

A.  $150^{\,\circ}$ 

B.  $180^{\circ}$ 

C.  $90^{\circ}$ 

D.  $330^{\circ}$ 

Answer: B

2. Which of these can not be a measure of an

angle of rotation for any figure ?

A.  $120^{\circ}$ 

B.  $180^{\circ}$ 

C.  $17^{\circ}$ 

D.  $90^{\circ}$ 

Answer: C

3. Which of the following have both line

symmetry and rotational symmetry?

A. An isosceles triangle

B. A scalene triangle

C. A square

D. A parallelogram

Answer: C
4. Which of the alphabet has both multiple

line and rotational symmetries ?

A. S

B.O

С. Н

D. L

**Answer: B** 

5. In the word 'MATHS' which of the following

pair of letters show rotational symmetry?

A. M and T

B. H and S

C. A and S

D. T and S

Answer: B

1. An equilateral triangle has ..... lines of

symmetry.

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2. A square has ..... lines of symmetry.



**5.** Circle has ..... lines of symmetry.



**6.** In an equilateral triangle the angle of rotation is .....

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7. If smallest angle of rotation is  $90^\circ$  then

order of rotation is......

8. An isosceles triangle has ..... symmetry.



Other Important Questions Which Of The Following Statement Is True And Which Is False

**1.** A polygon has minimum 4 line segments.

2. In a regular polygon the number of lines of

symmetry is equal to the number of its sides.



**4.** A rhombus has two lines of symmetry.

5. Scalene triangle has three lines of symmetry.

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**6.** The fixed point about which an object rotates is called centre of rotation.

7. Centre of rotation of a rectangle is point of

intersection of its diagonals.