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MATHS

NCERT - NCERT Maths(TELUGU)

SYMMETRY

Exercise

1. Can we make a polygon with less three line segments?

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2. What is the minimum number of sides of a polygon?

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3. Draw axes of symmetry for equilateral triangle.

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4. Draw axes of symmetry for square.

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5. Draw axes of symmetry for regular pentagon.

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6. Draw axes of symmetry for regular hexagon.

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7. What should be subtracted from $2a + 8b + 10$ to get $-3a + 7b + 16$?

8. (True/false) Every closed figure has an axis of symmetry

9. (True/false)A figure with atleast one axis of symmetry is called a symmetric figure.

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10. (True/false) A regular polygon of 10 sides will have 12 axes of symmetry.

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11. Draw a square and construct all its axes of symmetry. Measure the angles between each pair of succesive axes of symmetry. What do you notice? Does the same rule apply for other regular polygon?

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12. What is the angle of rotational symmetry of a square?

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13. What is the angle of rotational symmetry of a parallelogram?

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14. What is the angle of rotational symmetry of a circle?

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15. Look around you. Which objects have rotational symmetry. (i.e. rotational symmetry of order more than 1)

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16. The order of rotational symmetry of a square is

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17. (Fill in the blanks) The letter P has.....lines of symmetry.

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18. (Fill in the blanks) The letter M has.....lines of symmetry.

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19. (Fill in the blanks) The letter A has .....lines of symmetry.

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20. (Fill in the blanks) The letter O has .....lines of symmetry.

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21. (Fill in the blanks) A rectangle has.....lines of symmetry.

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22. Number of lines symmetry for letter H is .....

A. a. 4

B. b. 2

C. c. 3

D. d. 8

Answer:

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23. Number of lines symmetry for circle.....

A. 2

B. 10

C. 2012

D. Infinite

Answer:

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24. A square has.....lines of symmetry.

A. 4

B. 3

C. 8

D. 14

Answer:

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25. Equilateral triangle has.....lines of symmetry.

A. 3

B. 4

C. 6

D. 8

Answer:

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26. The letter Z has.....order of rotational symmetry.

A. 1

B. 2

C. 4

D. 3

Answer:

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27. The letter E has.....lines of symmetry.

A. a. 2

B. b. 3

C. c. 4

D. d. 1

Answer:

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28. The angle of turning during rotation is called.....of rotation.

A. Circle

B. Perimeter

C. Angle

D. None

Answer:

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Try This

1. In ΔABC right angled at B, AB = 24 cm, BC = 7 cm. Determine: sin A, cos A

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2. what are lines of symmetry

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3. Can we make a polygon with less three line segments?

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4. What is the minimum number of sides of a polygon?

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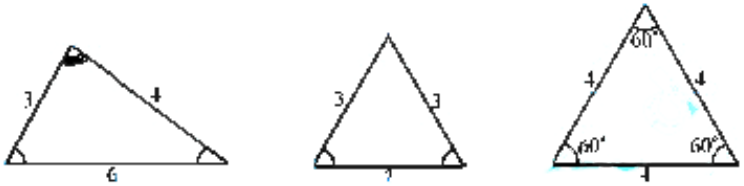
5. Given below are three types of triangles. Do all the triangles have the same number of lines of symmetry? Which triangle has more?



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6. Given below are different types of quadrilaterals. Do all of them have the same number of lines of symmetry? Which

quadrilateral has the most?

Rhombus Square Rectangle

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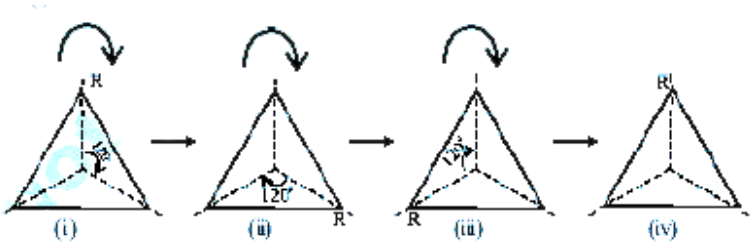
7. Can you now tell the order of rotational symmetry for an equilateral triangle.

How many lines of semetry?



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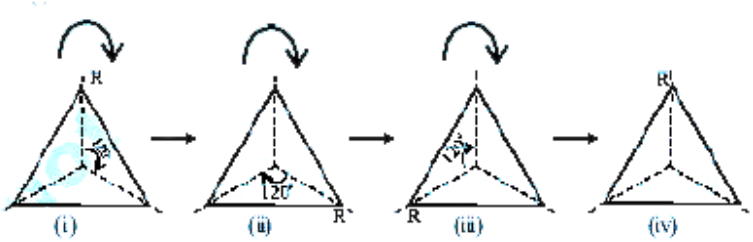
8. Can you now tell the order of rotational symmetry for an equilateral triangle.

How many lines of semetry?



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9. Look around you. Which objects have rotational symmetry. (i.e. rotational symmetry of order more than 1)

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10. Name 5 man-made things that are symmetric.

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11. Name 5 man-made things that are symmetric.

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12. Can we make a polygon with less than three line segments?

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13. What is the minimum number of sides of a polygon?

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14. Look around you. Which objects have rotational symmetry. (i.e. rotational symmetry of order more than 1)

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Do This

1. What is the angle of rotational symmetry of a square?

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2. What is the angle of rotational symmetry of a parallelogram?

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3. What is the angle of rotational symmetry of a circle?

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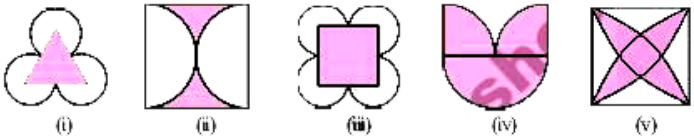
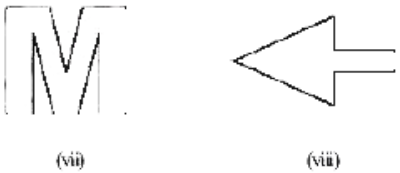
Exercise 1

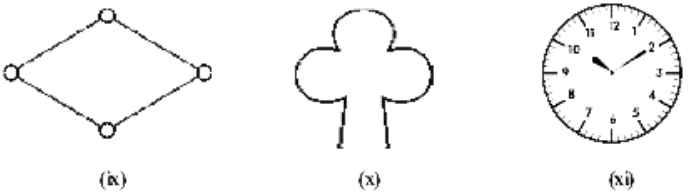
1. Given below are some fiugres. Which of them are symmetric? Draw the axes of symmetry for the symmetric figures.



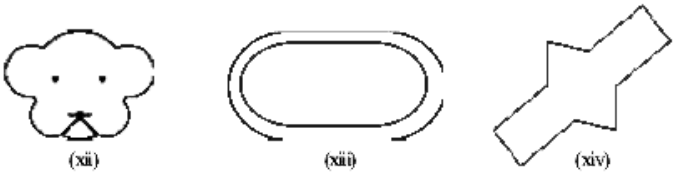
(i) (ii) (iii) (iv) (v)



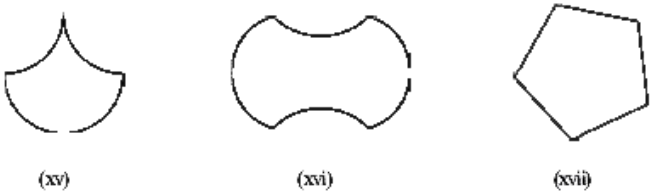
(vi) (vii) (viii)



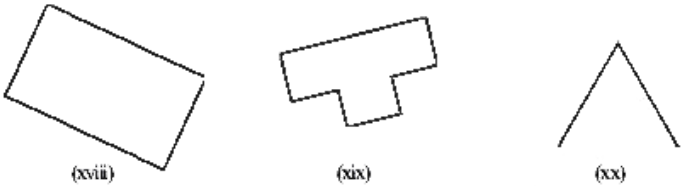
(ix) (x) (xi)



(xii) (xiii) (xiv)



(xv) (xvi) (xvii)



(xviii) (xix) (xx)

(xxi) (xxii) (xxiii)

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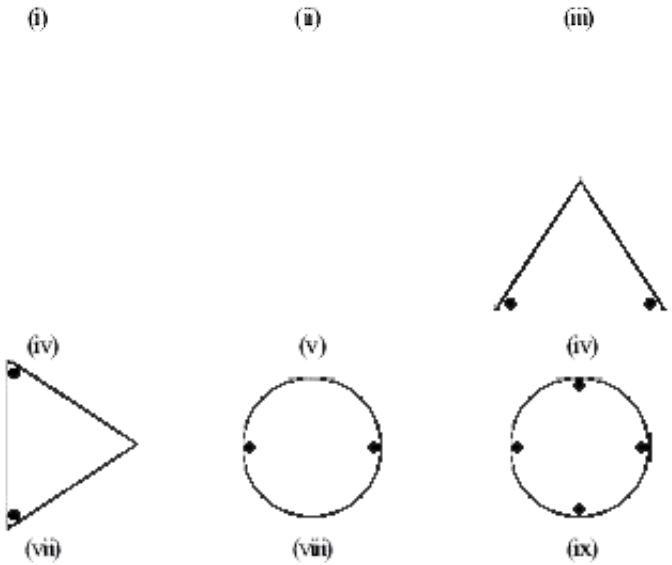
Exercise 2

1. In the figures given below find the axes of symmetry such that on folding along the axis the two dots fall on each other.



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2. Given the line of symmetry, find the other dot.

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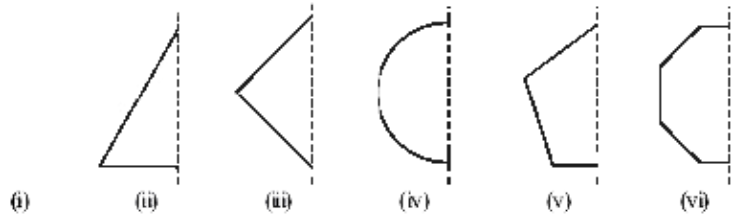
3. In the following incomplete figures, the mirror line (i.e. the line of symmetry) is given as a dotted line. Complete each figure, performing reflection on the dotted (mirror) line. (You might perhaps place a mirror along the dotted line and look into the mirror for the image). Are you able to recall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

the figure you complete?



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4. (True/false) Every closed figure has an axis of symmetry

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5. (True/false)A figure with atleast one axis of symmetry is called a symmetric figure.

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6. (True/false) A regular polygon of 10 sides will have 12 axes of symmetry.

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7. Draw a square and construct all its axes of symmetry. Measure the angles between each pair of succesive axes of symmetry. What do you notice? Does the same rule apply for other regular polygon?

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8. Draw a square and construct all its axes of symmetry. Measure the angles between each pair of succesive axes of symmetry. What do

you notice? Does the same rule apply for other regular polygon?

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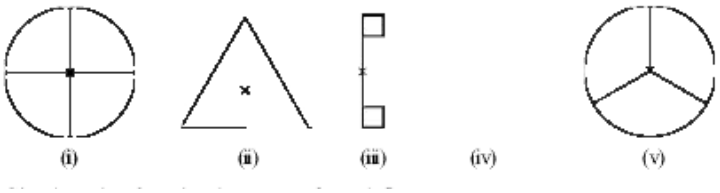
Exercise 3

1. Which of the following figures have rotational symmetry of order more than 1?



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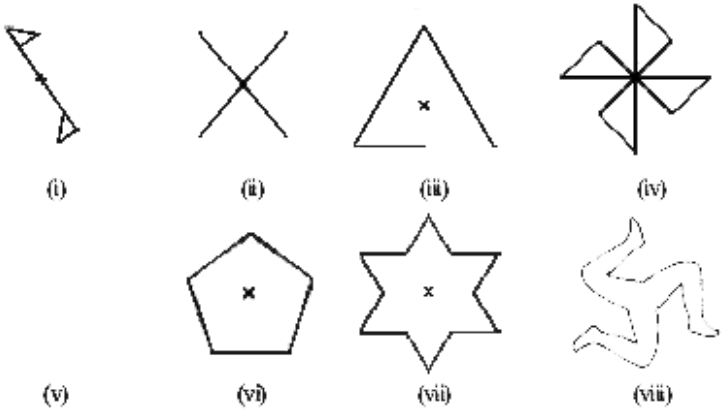
2. Give the order of rotational symmetry for each figure.



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3. Draw each of the shapes given below and fill in the blanks.

Shape	Centre of Rotation (intersection of diagonals/ Intersection of axes of symmetry)	Angle of Rotation	Order of Rota -tion
Square			
Rectangle			
Rhombus			
Equilateral Triangle			
Regular Hexagon			
Circle			
Semi-circle			

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Exercise 4

1. Some english alphabets have fascinating symmetrical structures. Which capital letters have only one line of symmetry (like E))? Which

capital letters have rotational symmetry of order 2 (like I)?

Fill the following table, thinking along such lines.

Alphabets	Line symmetry	Number of lines symmetry	Rotational symmetry	Order of rotational symmetry
Z	No	0	Yes	2
S				
H				
O				
E	Yes	1	No	-
N				
C				

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Exercise 2 True Or False

1. (True/false) Every closed figure has an axis of symmetry

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2. (True/false)A figure with atleast one axis of symmetry is called a symmetric figure.

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3. (True/false) A regular polygon of 10 sides will have 12 axes of symmetry.

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