

1.2 Rotation Symmetry and Transformations

MathLinks 9, pages 16–25

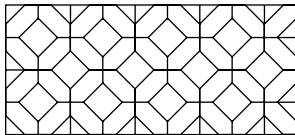
Key Ideas Review

Unscramble the words to complete the sentences below.

1. a) _____ symmetry means that a figure can be turned and fitted over itself.
NRTAIOTO
- b) The number of times a figure can be placed over itself is called the _____.
DEORR
- c) A line of _____ divides a figure into two reflected parts.
YYSRMTEM
- d) A _____ is a point on which a figure turns.
RETNEC
- e) The number of degrees in a _____ is 360.
ELCRIC

Check Your Understanding

2. Look at the design shown. Explain if the design has line symmetry, rotation symmetry, or both.



4. a) Choose a letter from the alphabet. Create a design using this letter at least four times. Repeat using two other letters.

3. Using the design shown above, complete the table.

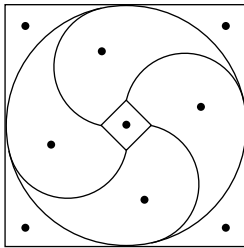
Shape	Lines of Symmetry	Order of Rotation	Angle of Rotation
Small square			
Octagon			

- b) Which letters that you chose have line symmetry? Explain.
- c) Which patterns show rotational symmetry? Justify your response.

5. a) Use the figure below to create a tessellation, repeating the figure at least six times to establish the pattern.



- b) Through what angles did you have to turn your figure to rotate it as you built your tessellation?
6. Susan wants to make a pinwheel pattern quilt design based on the pattern piece below. She is going to make all the pieces different colours and will repeat the pattern many times.



- a) Determine the order of rotation for the pattern shown above.
- b) Can Susan create a quilt design with more than one type of symmetry? Explain your answer.

7. Draw a large capital letter H on a blank piece of paper. Place a point in the middle of the letter H. Use your point as a centre and turn your letter H on this point.
- a) What is the order of rotation for the letter H?
- b) Fold the letter through the centre point. How many lines of symmetry can you find by folding your letter H?
- c) Repeat the exercise using the capital letter X. What is the order of rotation for the letter X?
- d) How many lines of symmetry can you find by folding your letter X?
- e) What other block letters have rotation symmetry?
- f) What other block letters have line symmetry?