

7.5 Reflections and Line Symmetry



Taj Mahal is a famous example of symmetry in architecture.

Many parts of the building and grounds were designed and built to be perfectly symmetrical.

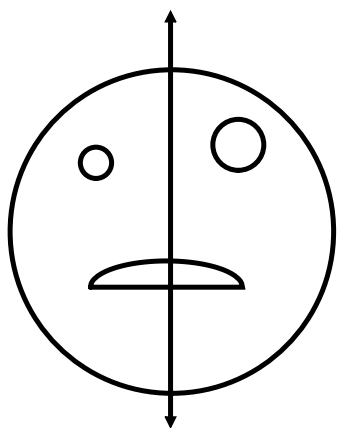
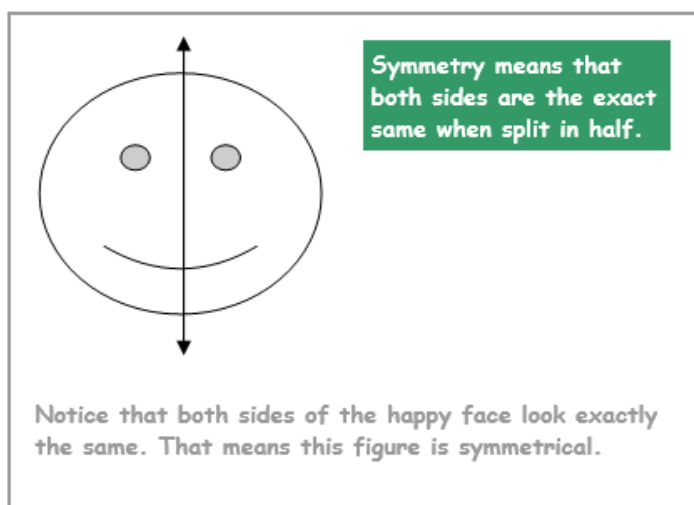
Symmetry creates a sense of balance.

line symmetry

- a figure is divided into 2 congruent parts using a line of symmetry (mirror image)
- one half of the figure is reflected exactly onto the other half
- a figure may have more than one line of symmetry

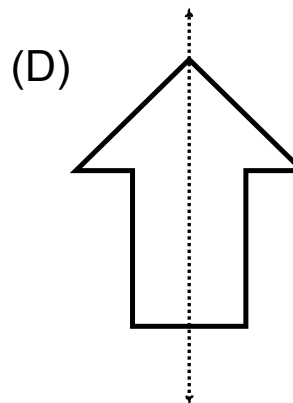
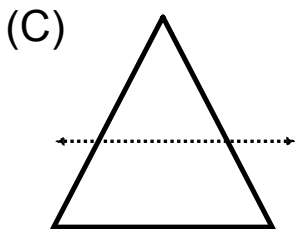
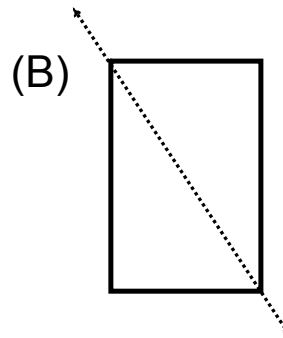
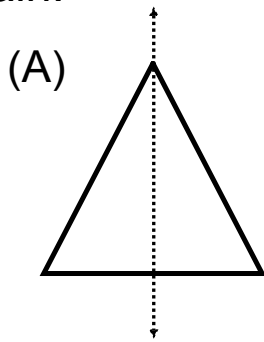
The line of symmetry (also called line of reflection) can be:

- horizontal
- vertical
- oblique

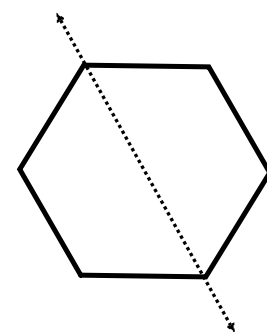
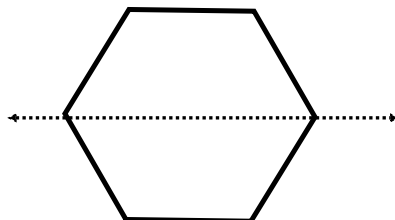
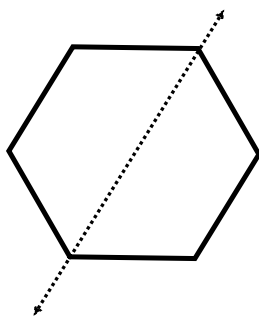
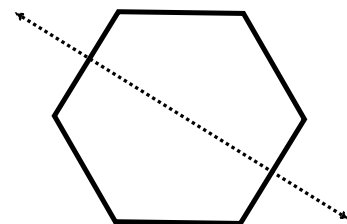
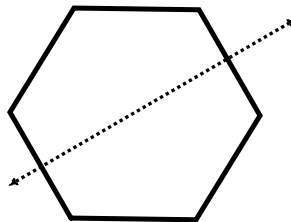
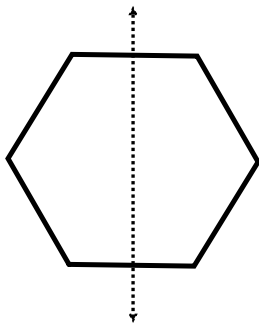


This figure is not symmetrical as both sides are not EXACTLY the same.

Is the dashed line in each figure a line of symmetry?
Explain.

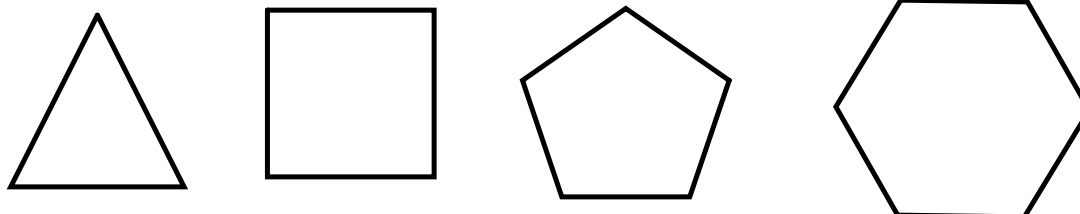


Is each a line of symmetry for the hexagon?



Can anymore lines of symmetry be drawn for a hexagon?

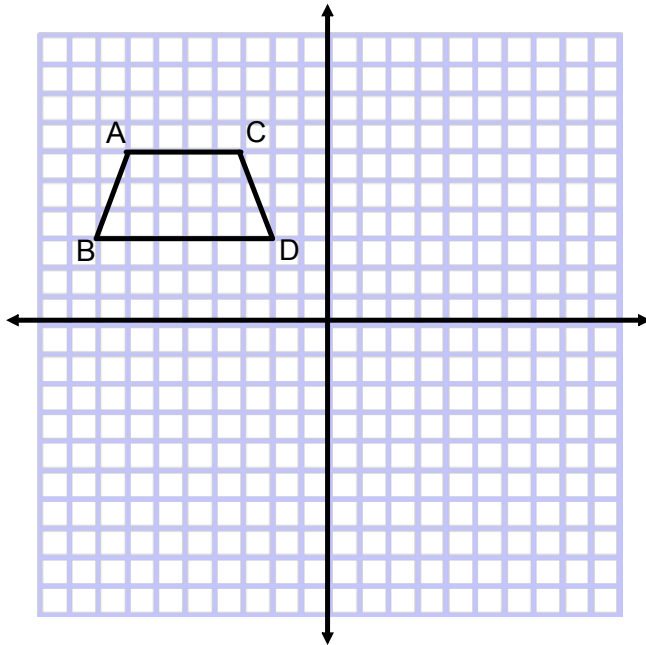
Investigate the lines of symmetry for regular polygons.



Number of Sides	Number of Lines of Symmetry
3	
4	
5	
6	
n	

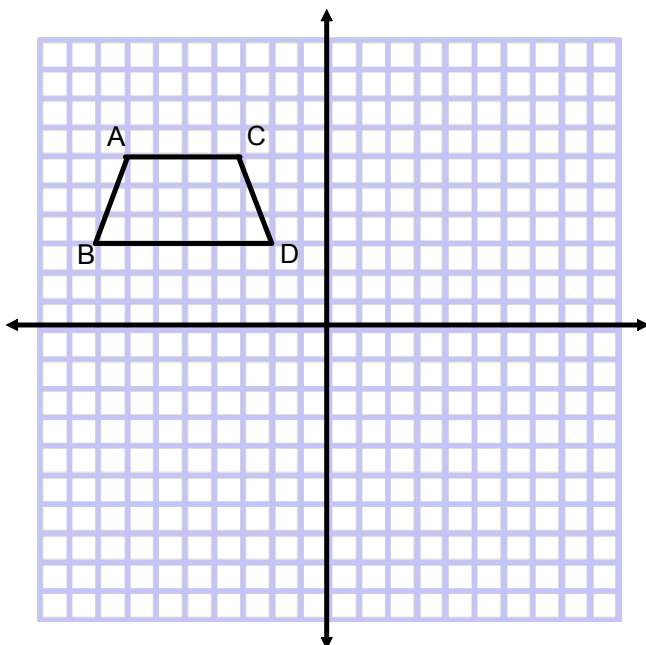
Make a general statement describing the relationship between the number of sides and the number of lines of symmetry that can be drawn in a polygon.

Reflecting on the Cartesian Plane



Reflect across the x-axis

Point	Image
A(-7, 6)	
B(-8,3)	
C(-3,6)	
D(-2,3)	

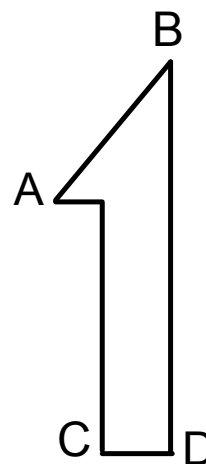


Reflect across the y-axis.

Point	Image
A(-7, 6)	
B(-8,3)	
C(-3,6)	
D(-2,3)	

This figure represents half of a shape. Create the final shape by constructing the missing half, use each case below:

- (a). Line of symmetry is BD
- (b). Line of symmetry is CD
- (c). Line of symmetry is AB



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