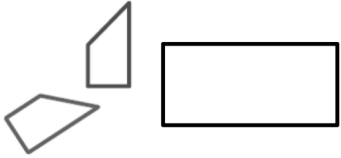


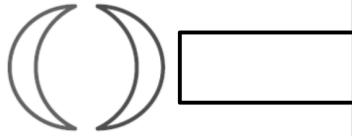
Warm Up

Identify each transformation.

1.



2.



Rotate $\triangle ABC$ with the given vertices by the given angle.

3. $A(3, -4), B(5, 1), C(-4, 0); 180^\circ$

4. $A(1, -5), B(7, -1), C(3, 6); 90^\circ$

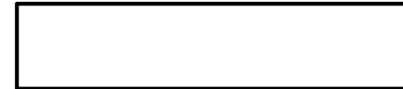
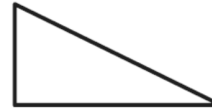
A figure has if there is a transformation of the figure such that the image coincides with the preimage.

Line Symmetry

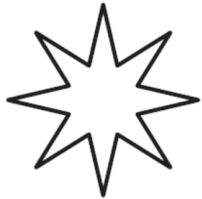
A figure has (or reflection symmetry) if it can be reflected across a line so that the image coincides with the preimage. The **line of symmetry** (also called the axis of symmetry) divides the figure into two congruent halves.



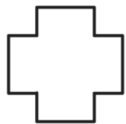
Tell whether the figure has line symmetry. If so, copy the shape and draw all lines of symmetry.



Tell whether the figure has line symmetry. If so, copy the shape and draw all lines of symmetry.



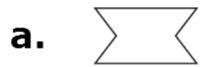
Tell whether the figure has line symmetry. If so, copy the shape and draw all lines of symmetry.



Draw two figures that have lines of symmetry

Draw two figures that do not have lines of symmetry

Tell whether each figure has line symmetry. If so, copy the shape and draw all lines of symmetry.

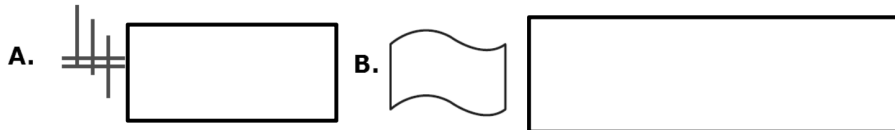


Rotational Symmetry

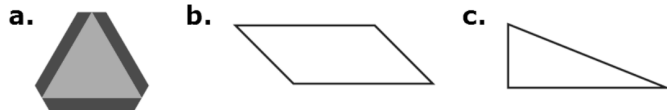
A figure has (or *radial symmetry*) if it can be rotated about a point by an angle greater than 0° and less than 360° so that the image coincides with the preimage.

The is the smallest angle through which a figure can be rotated to coincide with itself. The number of times the figure coincides with itself as it rotates through 360° is called the of the rotational symmetry.

Tell whether each figure has rotational symmetry. If so, give the angle of rotational symmetry and the order of the symmetry.



Tell whether each figure has rotational symmetry. If so, give the angle of rotational symmetry and the order of the symmetry.



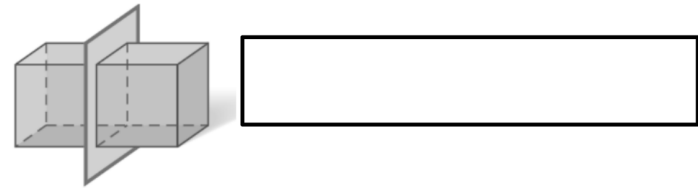
Describe the symmetry of each icon. Copy each shape and draw any lines of symmetry. If there is rotational symmetry, give the angle and order.



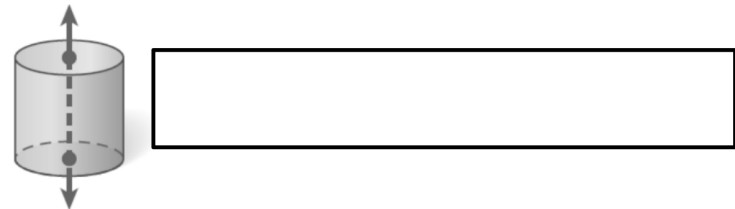
If a letter has line symmetry, draw the line,
 If a letter has rotational symmetry, draw a dot
 at the center of rotation

A B C D E
 F G H I J K
 L M N O P
 Q R S T U
 V W X Y Z

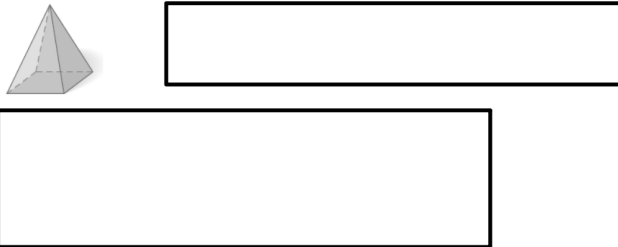
A three-dimensional figure has *plane symmetry* if a plane can divide the figure into two congruent reflected halves.



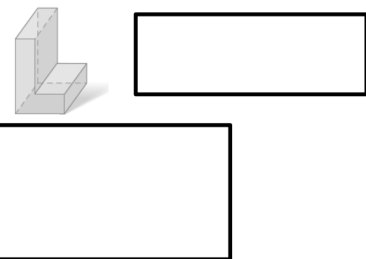
A three-dimensional figure has *symmetry about an axis* if there is a line about which the figure can be rotated (by an angle greater than 0° and less than 360°) so that the image coincides with the preimage.



Tell whether the figure has plane symmetry, symmetry about an axis, or neither.



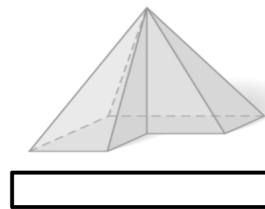
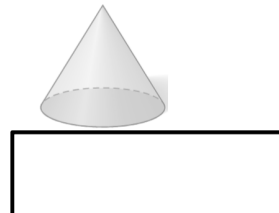
Tell whether the figure has plane symmetry, symmetry about an axis, or neither.



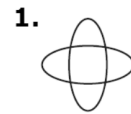
Tell whether each figure has plane symmetry, symmetry about an axis, or no symmetry.

a. cone

b. pyramid



Describe the symmetry of each figure. Draw any lines of symmetry. Give the angle and the order of any rotational symmetry.



Tell whether each figure has plane symmetry, symmetry about an axis, or neither.

