Reflection and Rotation Symmetry - WORKSHEET #8 – geometrycommoncore

NAME: __________________________

1. Draw in the lines of symmetry for each of the shapes. If none, leave the diagram blank.

   a) ![Star](Image)
   b) ![Rectangle](Image)
   c) ![Rectangle](Image)
   d) ![Spiral](Image)
   e) ![Arrow](Image)
   f) ![Square](Image)
   g) ![Parallelogram](Image)
   h) ![Regular Hexagon](Image)

2. Use the diagrams from question #1 to determine the order and angle of rotation symmetry for the following shapes. If none, write none.

   a) Order = ____________ Angle = ___________
   b) Order = ____________ Angle = ___________
   c) Order = ____________ Angle = ___________
   d) Order = ____________ Angle = ___________
   e) Order = ____________ Angle = ___________
   f) Order = ____________ Angle = ___________
   g) Order = ____________ Angle = ___________
   h) Order = ____________ Angle = ___________

   i) Which of the shapes have point symmetry? ______________________

   What do you notice about their orders? _________________________________________________________

3. Draw a figure that meets the given symmetry requirements. It must have:

   a) line symmetry, but not rotational symmetry.
   b) rotational symmetry, but not line symmetry.
   c) exactly 3 lines of symmetry.

<table>
<thead>
<tr>
<th>a) line symmetry, but not rotational symmetry.</th>
<th>b) rotational symmetry, but not line symmetry.</th>
<th>c) exactly 3 lines of symmetry.</th>
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4. a) Draw three different figures, each having exactly one line of symmetry.

   b) Do you notice any similarities in these three shapes?
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5. Given the shape, shade it so that it has reflectional symmetry.

a) One line of symmetry  
   ![One line of symmetry](image)

b) One line of symmetry  
   ![One line of symmetry](image)

c) Two lines of symmetry  
   ![Two lines of symmetry](image)

d) Two lines of symmetry  
   ![Two lines of symmetry](image)

6. Given the shape, shade it so that it has rotational symmetry.

a) Order 2  
   ![Order 2](image)

b) Order 2  
   ![Order 2](image)

c) Order 4  
   ![Order 4](image)

d) Order 4  
   ![Order 4](image)

7. Each figure shows part of a shape with a center of rotation and a given rotational symmetry. Complete the figure.

a) Order 4  
   ![Order 4](image)

b) Order 3  
   ![Order 3](image)

c) Order 8  
   ![Order 8](image)

8. What is the relationship between the order of the shape and the angle of rotation?

9. Here are the letters of the alphabet. Classify them into the given categories.

<table>
<thead>
<tr>
<th>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</th>
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</thead>
<tbody>
<tr>
<td>One Line of Symmetry</td>
</tr>
<tr>
<td>Two Lines of Symmetry</td>
</tr>
<tr>
<td>Rotational Symmetry</td>
</tr>
<tr>
<td>Point Symmetry</td>
</tr>
<tr>
<td>No Symmetry</td>
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</tbody>
</table>