1. **Figure 1:** 

   ![Figure 1: Triangle]

   **Figure 2:** 

   ![Figure 2: Parallelogram]

   a) Compare the two shapes above by filling out the following chart.

<table>
<thead>
<tr>
<th>Property</th>
<th>Figure 1</th>
<th>Figure 2</th>
<th>Same?</th>
<th>Different?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of vertices</td>
<td>3</td>
<td>4</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Number of edges</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pairs of parallel sides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of right angles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of acute angles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of obtuse angles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of lines of symmetry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the figure equilateral?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   b) By simply looking at the following figures, can you say how they are the same and different?

   **Figure 1:** 

   ![Figure 1: Triangle]

   **Figure 2:** 

   ![Figure 2: Parallelogram]

<table>
<thead>
<tr>
<th>Property</th>
<th>Same?</th>
<th>Different?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of vertices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of edges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pairs of parallel sides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of right angles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of acute angles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of obtuse angles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of lines of symmetry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the figure equilateral?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Draw two figures and compare them using a chart (as in Question 1).

3. Looking at the following figures, can you comment on their similarities and differences? Be sure to mention the following properties:

   ✓ The number of vertices
   ✓ The number of edges
   ✓ The number of pairs of parallel sides
   ✓ The number of right angles
   ✓ Number of lines of symmetry
   ✓ Whether the figure is equilateral
   ✓ Whether the figure has rotational symmetry

   **Figure 1:** 

   ![Figure 1: Pentagon]

   **Figure 2:** 

   ![Figure 2: Hexagon]
1. The following figures can be sorted by their properties:

![Shapes A to H]

<table>
<thead>
<tr>
<th>Property</th>
<th>Figures with this property:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am a quadrilateral</td>
<td>A, C, D, H</td>
</tr>
<tr>
<td>2. I am equilateral</td>
<td>B, C, F, H</td>
</tr>
</tbody>
</table>

Which figures share both properties? ________

Using the information in the chart above, complete the following Venn diagram.

**NOTE:** If a shape does not have either property, write its letter inside the box, but outside both circles.

Using figures A through H above, complete the Venn diagrams below.

<table>
<thead>
<tr>
<th>Property</th>
<th>Figures with this property:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am equilateral</td>
<td></td>
</tr>
<tr>
<td>2. I have no right angles</td>
<td></td>
</tr>
</tbody>
</table>

Which figures share both properties? ________

Using the information in the chart above, complete the following Venn diagram.
G6-18: Sorting and Classifying Shapes (continued)  

2. Record the properties of each shape. Write “yes” in the column if the shape has the given property. Otherwise, write “no”.

<table>
<thead>
<tr>
<th>Shape</th>
<th>Quadrilateral</th>
<th>Equilateral</th>
<th>Two or more pairs of parallel sides</th>
<th>At least one right angle</th>
<th>At least one acute angle</th>
<th>At least one obtuse angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Using two properties of your own make a chart and a Venn diagram as in Question 1. You might want to choose from the following:

- ✔ Number of vertices
- ✔ Number of pairs of parallel sides
- ✔ Number of edges
- ✔ Number of right, acute or obtuse angles
- ✔ Lines of symmetry
- ✔ Equilateral
- ✔ Rotational symmetry
1. Write T (for true) if both figures have the property in common. Otherwise, write F (for false).

Both figures have ...

a)  

- 4 vertices  
- 4 sides  
- 2 right angles

b)  

- 3 vertices  
- 5 sides  
- no right angles  
- equilateral

c)  

- 3 sides  
- 1 pair of parallel sides  
- 1 obtuse angle  
- at least 1 acute angle

d)  

- 4 sides  
- 1 pair of parallel sides  
- 2 right angles  
- 4 vertices

e)  

- quadrilateral  
- at least 1 right angle  
- at least 1 pair of parallel sides  
- 2 pairs of parallel sides

f)  

- 6 vertices  
- at least 2 pairs of parallel sides  
- no right angles  
- equilateral

2. a) I have three sides. All of my sides are the same length. I'm an ...

b) I have three sides. Two of my sides are the same length. I'm an ...

c) I am a quadrilateral with two pairs of parallel sides. I'm a ...

d) I am a quadrilateral with exactly one pair of parallel sides. I'm a ...

3. Describe each figure completely.
In your description you should mention the properties listed in Question 3 in the previous section.

a)  

b)  

c)  

4. Name all the properties the figures have in common. Then describe any differences.

a)  

b)  

Geometry 1
1. Copy the following figures onto cm grid paper.  
   Be sure to be exact.
   i) Measure the sides and angles of each figure.
   ii) Name each figure. (Explain how you know what kind of figure you drew.)

2. Using a ruler and a protractor, construct:  
   a) a parallelogram  
   b) a rhombus  
   c) an isosceles triangle

3. a) Estimate the size of $\angle ABC$ and $\angle DEF$.  
   Which angle is greater?
   b) How can you use the grid to give an exact measurement for $\angle ABC$?

4. Copy the shape onto grid paper and mark:
   • 2 acute angles with a single line,
   • 2 obtuse angles with a double line, and
   • 4 right angles with a square.

5. Which of the quadrilaterals have only one name?  
   Which have two? Which have three?  
   Write as many names as you can for each figure.

6. Circle the acute angles in each triangle.  
   One of the triangles has a right angle. Can you find it?

7. Name the triangles:
   a) I have three equal sides.
   b) I have one angle greater than a right angle.
   c) I have one right angle.
   d) I have 3 angles less than 90°.