1) Determine which of the following figures is a polygon.

a) __________  b) __________  c) __________  d) __________

2) Identify the polygon. Determine if the polygon is concave or convex. State if the polygon is equiangular, equilateral, regular, or none of the above.

2) __________  3) __________  4) __________

5) Fill in the missing blanks in the polygon table.

<table>
<thead>
<tr>
<th>Polygon Type</th>
<th>Number of Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangle</td>
<td>3</td>
</tr>
<tr>
<td>Quadrilateral</td>
<td>4</td>
</tr>
<tr>
<td>Pentagon</td>
<td>5</td>
</tr>
<tr>
<td>a)</td>
<td>6</td>
</tr>
<tr>
<td>b)</td>
<td>7</td>
</tr>
<tr>
<td>c)</td>
<td>8</td>
</tr>
<tr>
<td>d)</td>
<td>9</td>
</tr>
<tr>
<td>e)</td>
<td>12</td>
</tr>
<tr>
<td>Decagon</td>
<td>10</td>
</tr>
<tr>
<td>Hendecagon</td>
<td>11</td>
</tr>
<tr>
<td>n-gon</td>
<td>n</td>
</tr>
</tbody>
</table>
6) Decide if the statement is **Always**, **Sometimes**, or **Never** true.

   a) A rectangle is a rhombus.  
   b) A square is a quadrilateral.  
   c) A trapezoid is a kite.  
   d) A kite is a pentagon.  
   e) The sum of the interior angles of a rhombus is 360°.  
   f) A rectangle has opposite sides parallel.  
   g) A trapezoid has two congruent legs.  
   h) A triangle is concave.

7) **Determine the sum of the measures of the interior angles for each polygon given.**

   a) Kite  
   b) Hexagon  
   c) Decagon

   Calculate the measure of each **INTERIOR**, **CENTRAL**, and **EXTERIOR** angle for each regular polygon.

8) **Triangle**

9) **Octagon**

Identify the value of **x** and **y** in each quadrilateral.

10) \[ \begin{array}{c}
125° \\
\ x° \\
\ y° \\
\end{array} \]

   10) \( x = \) \_

   \( y = \) \_

11) \[ \begin{array}{c}
5 \\
\ x° \\
\ y° \\
\end{array} \]

   11) \( x = \) \_

   \( y = \) \_

---

Unit 5: TEST Polynomials Page 2 of 4
For questions 12 and 13, determine the value of $x$ and $y$ if the polygon is a parallelogram.

12) $x = \underline{\hspace{2cm}}$

13) $y = \underline{\hspace{2cm}}$

Construct the polygon listed below. Be sure to mark each polygon appropriately.

14) Convex, Regular, Hexagon

15) Concave, Nonagon

Determine the length of the midsegment of the trapezoid below.

16) $\underline{\hspace{2cm}}$
17) Show that the polygon below is a parallelogram by using the slope and distance formula.

\[ \text{Slope of } AB = \underline{\quad} \]

\[ \text{Slope of } DC = \underline{\quad} \]

\[ m_{AB} = \underline{\quad} \]

\[ m_{DC} = \underline{\quad} \]

Slope of \( \overline{AB} \) = \underline{\quad}

Slope of \( \overline{DC} \) = \underline{\quad}