(8) 1. Circle the number which best completes each statement. (If the answer is “infinite”, circle the symbol “∞”.
   a. 0 1 2 3 ∞ The number of distinct points necessary to determine a specific line is ....
   b. 0 1 2 3 ∞ The number of planes containing a line is ...
   c. 0 1 2 3 ∞ The number of intersection points of a pair of skew lines is ....
   d. 0 1 2 3 ∞ The number of points shared by a plane and a line perpendicular to the plane is ....
   e. 0 1 2 3 ∞ The number of non-collinear points needed to determine a plane is ...
   f. 0 1 2 3 ∞ The number of planes containing two lines which intersect is ....
   g. 0 1 2 3 ∞ The number of different (non-congruent) triangles with sides 5cm, 7cm, & 9cm, is ....
   h. 0 1 2 3 ∞ The number of different (non-congruent) triangles with sides 2cm, 4cm, & 6cm, is ....

(6) 2. Multiple choice. For each statement, choose the BEST completion of the statement from this list:
A  circle  B  cube  C  hexahedron  D  line  E  octahedron  F  parallelogram
G  plane  H  point  I  polygon  J  polyhedron  K  prism  L  pyramid
M  rectangle  N  rhombus  O  segment  P  sphere  Q  square  R  simple closed curve

   a. A quadrilateral with all sides congruent is a ____________
   b. The polyhedron illustrated at right is a ____________
   c. The set of all points in a plane equally distant from a given point P is a ____________
   d. The figure at right can be folded up into the polyhedron known as a ____________
   e. A simple closed curve consisting of line segments is a ____________
   f. A parallelogram with an interior angle measuring 90° is a ____________

(3) 3. In the illustration at right, A & B are tangled with a simple closed plane curve. Are the points A and B on the same side of the curve? ____
Explain (briefly) how you know: ____________

(5) 4. Find the measure of the angle marked x.

(10) 5. Given the triangle and measurements illustrated, find the measure of the angle marked y. Explain what triangles are similar and how you know they are.
(10) 6. \textit{Without} using a protractor, \textit{showing your work}, find the \textbf{sum} of the measures of the interior angles in the polygon at right:
\[
\text{m}(\angle a) + \text{m}(\angle b) + \text{m}(\angle c) + \text{m}(\angle d) + \text{m}(\angle e) + \text{m}(\angle f) =
\]
What is the measure of one interior angle of a \textbf{regular hexagon}?

(5) 7. \textbf{Explain} why there can be no regular convex polyhedra with faces which are hexagons. Be specific, but concise.

(10) 8. Given that EFG & H are the midpoints of the sides of rectangle ABCD, prove that quadrilateral EFGH is a rhombus. You can mark the illustration to supplement your statements.
(5) 9. A monument casts a 60-meter shadow at the same time that a 6-foot post casts a shadow 4 feet long. How tall is the monument?

(5) 10. Given $\ell \parallel m$ Name two similar triangles; explain concisely what guarantees that the triangles are similar.

(7) 11. Carefully illustrate (sketch) the three altitudes of the triangle ABC. Where do their extensions meet?
12. Showing all necessary marks, construct the altitude of ABC that contains the point A.

13. Showing your work, carefully construct a circle containing the points A, B, and C below.

14. Showing all necessary marks, construct the parallelogram that contains the sides given.