(12) 1. Fill in the blank to make a complete and true statement.

 a. The number of distinct points necessary to determine a specific line is

 b. The number of distinct points necessary to determine a specific plane is

 c. The number of distinct triangles with lengths 2cm, 3cm and 7cm is

 d. The minimum number of faces on a convex polyhedron is

 e. The minimum number of faces on a prism is

 f. The number of line segments connecting nine points, with no 3 collinear, is

(16) 2. Multiple choice. For each statement, choose the BEST completion of the statement from this list:

|					
A circle	B cube	C dodecahedron	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 simple closed curve consisting of line segments is a ☐

 b. The polyhedron illustrated at right is a ☐   2b

 c. The figure at right can be folded up into a polyhedron known as a ☐

 d. The set of all points in a plane equally distant from a given point *P* is a ☐   2c

 e. A figure that is both a rhombus and a rectangle must be a ☐

 f. A parallelogram with an interior angle measuring 90° is a ☐

 g. A quadrilateral with all sides congruent is a ☐

 h. The figure illustrated at right is a ☐   2h.
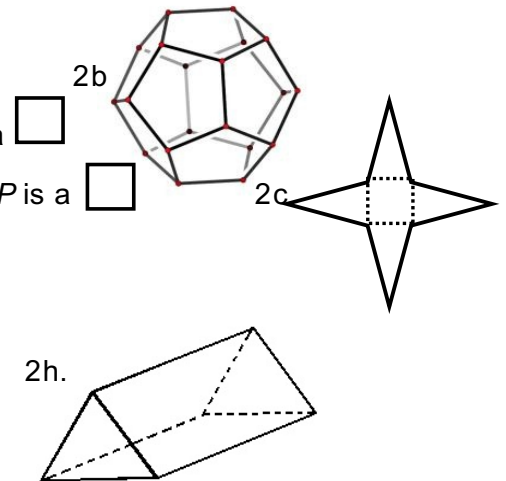
(6) 4. Find the measure of the angle marked x

x
50°
120°

60°   x
110°
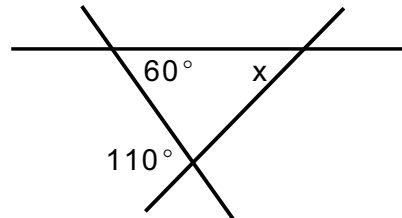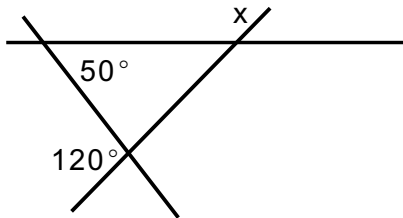
Given ℓ and m are parallel lines, find the measure of the angle marked *y*.

55° ℓ
y
130°
m

125° ℓ
y
60°
m
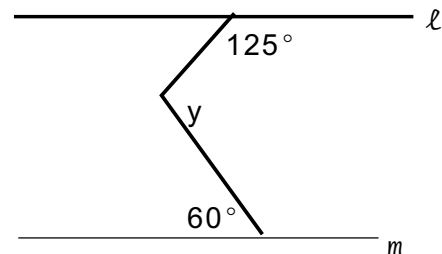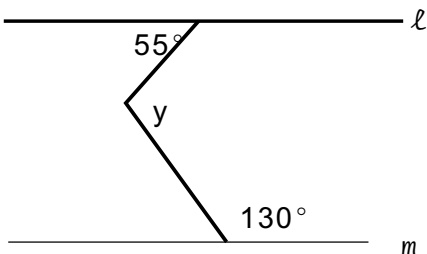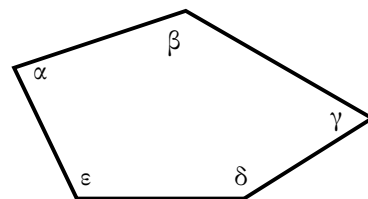
(4) 5. The measure of the complement of 75°34′21″.   Find the measure the supplement of 73°24′31″.

(6) 6. *Without* using a protractor, *showing your work*, find the **sum** of the measures of the interior angles in the polygon at right:

$$m(\angle\alpha) + m(\angle\beta) + m(\angle\gamma) + m(\angle\delta) + m(\angle\varepsilon) = \underline{\qquad}$$

What is the measure of one interior angle of a **regular pentagon**?

(8) 7a. Sketch (neatly & correctly) a... Pyramid with a pentagonal base; .. Prism with hexagonal base

b. State the number of faces: ☐   ☐

    the number of edges: ☐   ☐

      and vertices: ☐   ☐

(10) 8. Given parallelogram ABCD, and assuming we know ONLY THE DEFINITION of the parallelogram, prove that opposite sides AB and CD are congruent. (You can mark the illustration to supplement your statements.)
Hint: Create two congruent triangles in this illustration.
   Prove they are congruent. Then use them to draw the conclusion.
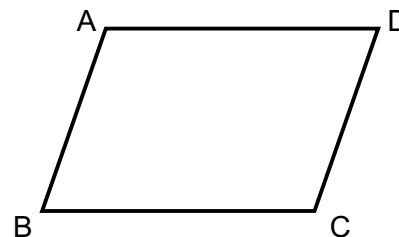
(3) 9. Name the figures illustrated as specifically as possible.
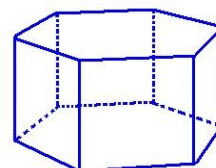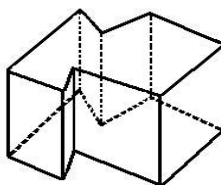
(7) 10. We bisected angle B by swinging an arc centered at B across
the rays that comprise B. That arc crosses the rays at D and E.
We then created arcs with identical radii centered at D & E.
The intersection of these arcs is F.   PROVE that BF bisects
the original angle B. (Hint: what triangles are congruent, and why?)
(You can mark the illustration to supplement your statements.)
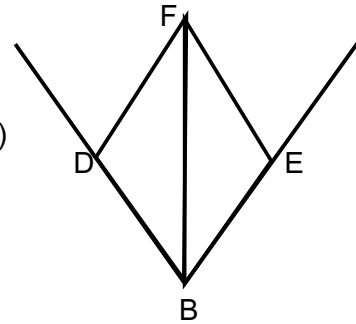
(4) 11. Given the triangle and measurements illustrated,
Find the measure of angle x. SHOW all the angles you find in order to determine the measure of x.
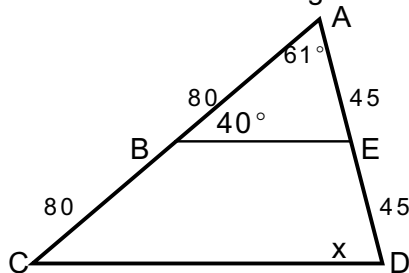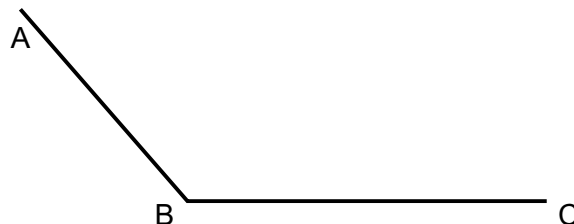
(5) 12. Carefully illustrate (sketch) the
three altitudes of the triangle ABC.
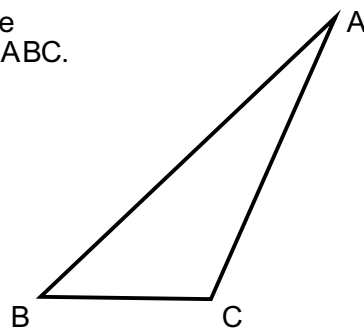
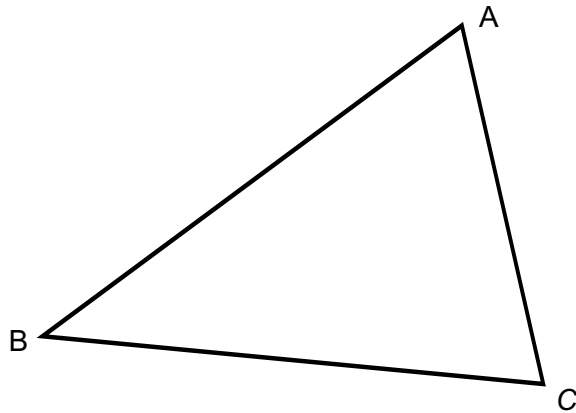(3) 13. Using your protractor, carefully measure the angle shown.

m (∠ABC) ≈

(5) 14. *Showing all necessary marks*, **construct** a line through A parallel to BC.

A .

B ———————————————— C
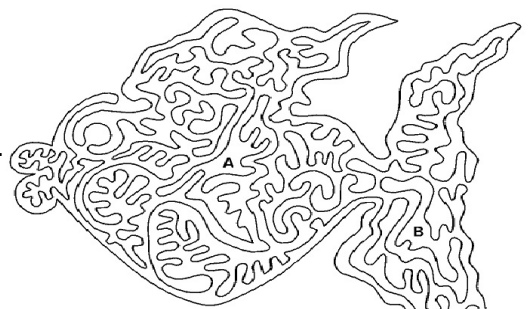
(8) 15. *Showing your work,* carefully **construct** a circle passing through the vertices of triangle ABC below.

(4) 16. Carefully **draw** two **different** (not congruent) triangles with sides shown.
(That is, draw △ABC and △DEF where AB≅DE and BC≅EF but △ABC ≇ △DEF.)

———————————

———————————

(3) 17. Given the illustration at right* is of a simple closed plane curve,
are points A & B on the SAME side, or OPPOSITE sides,
of the curve? ————————————— Explain (briefly) how you know.

* curve does not include "A" & "B"