Name _____   Date _____   Score _____

TEST 1   *Plane Geometry*

Sections 1.1–1.14

TRUE/FALSE: Write *true* if the statement is always true; write *false* if it is not always true.
(–3 each)

true   **1.** Two quantities that are equal to the same quantity are equal to each other.

true   **2.** A straight angle contains 180°.

false   **3.** A right triangle may also be obtuse.

true   **4.** An obtuse triangle may have only one obtuse angle.

true   **5.** If two lines are perpendicular, then they form right angles.

true   **6.** If a triangle is equilateral, it is also acute.

false   **7.** If two angles are equal, then they are supplementary.

false   **8.** A bisector of one angle of a triangle is perpendicular to the side opposite that angle.

false   **9.** Two angles whose sum is a right angle are said to be supplementary.

true   **10.** The legs of an isosceles triangle are equal.

false   **11.** The whole is greater than the sum of its parts.

ALWAYS, SOMETIMES, NEVER: Select the word which best completes each sentence. Then write *A, S,* or *N* in the blank at the left. *(–2 each)*

S   **12.** Two angles that have a common side are __?__ adjacent.

A   **13.** If equal quantities are multiplied by equal quantities, the products are __?__ equal.

A   **14.** If two straight lines intersect, the vertical angles formed are __?__ equal.

(continued)

___S___ **15.** Two angles that are supplementary are __?__ equal.

___A___ **16.** An equilateral triangle is __?__ equiangular.

___N___ **17.** Three angles that have a sum of 90° are __?__ complementary.

___A___ **18.** A bisector of a line segment __?__ passes through the midpoint of the segment.

___A___ **19.** The bisectors of two adjacent supplementary angles are __?__ perpendicular to each other.

___S___ **20.** An obtuse triangle is __?__ isosceles.

___A___ **21.** The supplement of a right angle is __?__ a right angle.

MULTIPLE CHOICE: Write the letter of the correct answer. *(–2 each)*

___b___ **22.** A scalene triangle has __?__.
     a. two sides equal   **c.** three sides equal
     b. no sides equal   **d.** none of these

___c___ **23.** If the non-common sides of two adjacent angles lie in opposite directions on a straight line, then the two angles are __?__.
     a. equal   **c.** supplementary
     b. complementary   **d.** none of these

___d___ **24.** An angle of 90° is __?__.
     a. an oblique angle   **c.** a reflex angle
     b. an obtuse angle   **d.** none of these

___b___ **25.** If two lines are perpendicular, they form at the point of intersection __?__.
     a. acute angles   **c.** obtuse angles
     b. right angles   **d.** none of these

___a___ **26.** A line segment has __?__.
     a. two endpoints   **c.** no endpoints
     b. one endpoint   **d.** none of these

___a___ **27.** If the sum of two angles is an obtuse angle, at least one of the angles *must* be __?__.
     a. acute   **c.** obtuse
     b. right   **d.** none of these

___b___ **28.** As the size of an angle increases, the size of its supplement __?__.
     a. increases   **c.** remains the same
   **b.** decreases   **d.** none of these

Name _____

COMPLETION: Write the correct answer in the blank at the left. *(–2 each)*

_____*hypotenuse*_____ **29.** In a right triangle, the side that is opposite the right angle is called the __?__.

_____*equal*_____ **30.** If two angles are vertical angles, then they are __?__.

_____*sums*_____ **31.** If equal quantities are added to equal quantities, the __?__ are equal.

_____*remainders (or differences)*_____ **32.** If equal quantities are subtracted from equal quantities, the __?__ are equal.

_____*T*_____ **33.** If an angle is labeled *RTS* the vertex lies at point __?__. ✓

_____*acute*_____ **34.** If two angles, neither of which is a right angle, are complementary, they must both be __?__.

_____*45°*_____ **35.** If two angles are both equal and complementary, their measures are __?__.

_____*45°*_____ **36.** If a polygon has 8 sides, the size of an angle at the center is __?__.

_____*obtuse*_____ **37.** The supplement of an acute angle is a(n) __?__ angle.

_____*equal*_____ **38.** If two quantities are equal to the same quantity, or to equal quantities, then they are __?__.

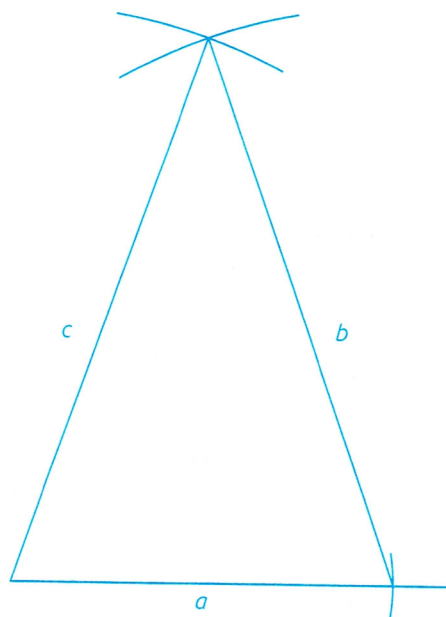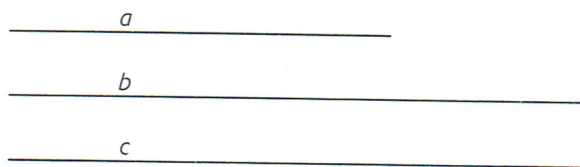**CONSTRUCTIONS:** Construct each figure according to the given description. *(–2 each)*

39. Construct a regular polygon of five sides, with each side equal to the given segment *a*. (Use your protractor to draw the angles.)
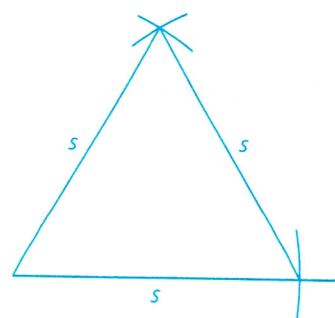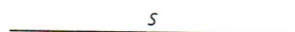
_____
   a
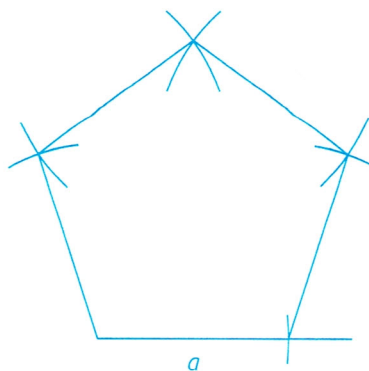
(continued)

40. Construct a triangle with sides of
the given lengths.

_____ a _____

_____ b _____

_____ c _____

41. Construct a triangle which has all
three sides equal to the given length.

_____ s _____

42. Draw a triangle that has the given
base and base angles of 65° and 35°.

_____
         b