**Honors Geometry PRACTICE TEST 1**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

True-False. Clearly indicate whether each statement is true or false.

\_\_\_\_\_\_\_ 1. Points that do not lie on the same line are called noncollinear.

\_\_\_\_\_\_\_ 2. Right angles may be assumed from a diagram.

\_\_\_\_\_\_\_ 3. Relative segment sizes may not be assumed from a diagram.

\_\_\_\_\_\_\_ 4. A right angle has no supplement.

\_\_\_\_\_\_\_ 5. An equilateral triangle is also isosceles.

\_\_\_\_\_\_\_ 6. The legs of a right triangle compose its right angle.

Answer each statement with Always (A), Sometimes (S), or Never (N)

\_\_\_\_\_\_\_ 7. If segments are congruent, their lengths are equal.

\_\_\_\_\_\_\_ 8. The three sides of an equilateral triangle are the same length.

\_\_\_\_\_\_\_ 9. An obtuse angle has a supplement, but not a complement.

\_\_\_\_\_\_\_ 10. Congruent angles have the same measure.

\_\_\_\_\_\_\_ 11. A scalene triangle may have two congruent sides.

\_\_\_\_\_\_\_ 12. The legs of an isosceles triangle are congruent.

13. A 608-cm steel rod is cut into two sections having a ratio of 34: 42. Find the resulting length of

 each section:

 Section 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Section 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Degrees-Minutes-Seconds (D-M-S).

 a.) Convert 36 $\frac{7}{16}$ ° to D-M-S: a.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b.) Convert 37° 50' to degrees: b.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. If m$∠$ ABC = 90° and m$∠$ DBC = 35° 12' 42",

 A

 D

 B C

 find m$∠$ ABD:

 m$∠$ ABD = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. If m$∠$ ABC = 180° and m$∠$ ABD = 152° 37' 29",

find m$∠$ DBC:

m$∠$ DBC = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 D

 A B C

17. $∠$ A is acute, give the following:

a.) Restrictions on m$∠$ A: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.) Restrictions on x: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (3x - 12°)

 A

18. If m$∠$ ABC = 90° find x as well as m$∠$ 1 and m $∠$ 2: A

x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ D

m$∠$ 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (x – 8)°

m$∠$ 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 (7x – 7)°

 B 2

19. Find x as well as m$∠$ 1 and m$∠$ 2: D

x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

m$∠$1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (10x – 7)° (7x – 17)°

m$∠$ 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 2

 A B C

20. $∠$ ABC is a right angle. If m $∠$ 1 and m$∠$ 2

are in a ratio of 7 : 8, find x as well as m$∠$ 1 and A

m$∠$ 2: D

x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

m$∠$ 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 2

vm$∠$ 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 B C

21. If m$∠$ 1 and m$∠$ 2 are in a ratio of 5: 7, find x D

as well as m$∠$ 1 and m $∠$2:

x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

m$∠$ 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 2

m$∠$ 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 A B C

22. The length and width of a rectangle are integer values. If

the length of the figure is five less than double the width, and

if its perimeter is 536 mm, find the dimensions of the polygon.

Dimensions of rectangle ABCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 A B

 C D

23.. The side lengths of an isosceles triangle are integer value. If the legs of the triangle are three units longer than its base and if the perimeter of the polygon is 339 cm, find the dimensions of the figure.

Dimensions of ABC: Legs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24. Given the diagram as shown, with PQ = x2 + 6, QR = 2 + 5x, and PR = 22 cm, find x, PQ, and QR:

x: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PQ: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ QR: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

P Q R

25. If an angle measure is decreased by double its complement, the result is forty less than its supplement. Find the measure of the angle, its complement, and its supplement.

Angle: \_\_\_\_\_\_\_\_\_\_\_\_\_ Complement: \_\_\_\_\_\_\_\_\_\_\_\_\_ Supplement: \_\_\_\_\_\_\_\_\_\_\_\_\_

26.  Which of the following is true for the figure?

 a. PO $≅$ OQ
 b. RO ≅ OQ

 c. OP ≅ OR

 d. RO ≅ OS

26. r4 – 13r + 136 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27. a2 + 36a – 117 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

28. 605a2 – 980z2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29. c2 – 25c + 144 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

30. m2 – 4m – 32 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

31. The sum of the supplement and the complement of an angle is 130 degrees. Find the measure of the angle.

32. The midpoint of a segment is (3, 6). If one endpoint is (4, 7), what is the other endpoint?

33. Five friends are standing in a circle. How many different line segments can be drawn that connect two friends?

34. Sydney’s senior picture package includes several sizes of portraits. The smallest photo is a 1.5-inch wide and 2-inch tall rectangle. The largest photo is 12 inches wide and is similar to the smallest photo. How tall is the largest photo?

35. The rectangle below is made up of 12 congruent (same size) squares. Find the perimeter of the rectangle if the area of the rectangle is equal to 432 square cm. 

36. Find the area of the given shape.



Bonus

The shaded region below is the common area to four semicircles whose diameters are the sides of the square with side length 4x. Find the area of the shaded region in terms of x.



