**Midterm Exam**

**Constructions**

1. Construct a perpendicular bisector of using a compass and straight edge. (3 points)

*A B C*

2. Construct an angle bisector of the given angle. (3 points)

**3.** The measure of angle *T* is 50°.

a. What is the measure of an angle that is complementary to angle *T*? (1 point)

b. What is the measure of an angle that is supplementary to angle *T*? (1 point)

**4.** True or false: If *M* is the midpoint of , then *.*

**5.** In the figure, line *x* is parallel to line *y* and . Determine the measure of angle 7. (1 point)



**6**. Sketch and label each of the following geometric figures.

a. Adjacent, supplementary anglesand *.* (1 point)

b. Two intersecting lines with vertical angles 1 and 2 and vertical angles 3 and 4. (1 point)

**7.** Write the letter of the description in front of each term. (1 point each)



1. \_\_\_\_\_\_
2. \_\_\_\_\_\_
3. \_\_\_\_\_\_
4. \_\_\_\_\_\_
5. \_\_\_\_\_\_

(*for credit, you must write the correct letters in the blanks*)

**8.**



True or false: the points *D, E,* and *F* collinear.

**9.** (1 point)



**10.** Given the diagram at right. (1 point each)

a.  and  are called what kind of angles?

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b.  and  have what relationship?

c. What would you call the angle pair  and ?

d. Name a pair of corresponding angles.

**11.** In the construction at right, name two perpendicular lines or line segments. Use proper notation.

(1 point)

**12.** (1 point)



**13.**

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a. Name three collinear points.

b. Name two angles that make up a linear pair.

**14.** If ∠ *A* and ∠ *B* are complementary angles and the *m*∠*A* is twice the *m*∠*B*, find *m*∠*A* and *m*∠*B*.

(2 points)



**15.** At right, name two angles that form linear pairs with .

a. b.

**16**. In the given diagram the lines *x* || *y*, and  and .   
Solve for *x* (2 points)

**17.**

Given . What is ?

**18.** Of two supplementary angles, one has a measure of 50 degrees. What is the measure of the other angle?

**19.** In the diagram at right, two parallel lines intersect a transversal line

a. Name two congruent angles

1

2

3

b. What is the sum of the measures of  and?

**20.** True or false: If  and are supplementary angles, then the sum of and is 180 degrees.

**21.** Given  as shown in the figure. Solve for *x* and the measures of the two angles. Show the steps and check your result. (6 points)

Geometry:

1 2

Substitute:

Solve algebra:

*x =*

**

**

Check:

**22.** The measures of two interior angles of a triangle are 40 degrees and 30 degrees. What is the measure of the third angle? (1 point)

**23.** The measures of the angles of triangle are represented by *x*, 3*x*+10, and 2*x*+20. Solve for *x*.

(2 points)

1

2

3

**Construct an angle bisector of the given angle.**

A