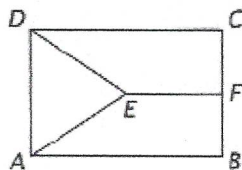


Geometry Chapter 3&4 Retest

Name _____

1. Read the following statements carefully and mark them true or false.
 - a. An angle has more than one bisector. _____
 - b. If two lines intersect, they form two pairs of vertical angles. _____
 - c. Two lines that do not intersect must be parallel. _____
 - d. If two angles are a linear pair, then they are complementary. _____
 - e. The sides of one of two vertical angles are opposite rays to the sides of the other. _____

2. This figure shows the design of the flag of Czechoslovakia.



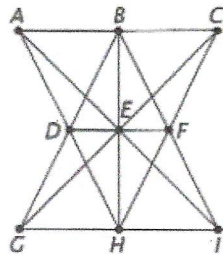
What type of angle does each of the following angles appear to be?

- a. $\angle EAB$ _____
- b. $\angle ADC$ _____
- c. $\angle BFC$ _____

Name a pair of angles with a common vertex in the figure that appear to be

- d. supplementary. _____
- e. a linear pair. _____

3. Write the equation that follows from each of the following statements about the figure.



- a. $G-H-I$ _____
- b. $EA-EB-EC$. _____
- c. $\angle CEI$ and $\angle IEG$ are supplementary. _____

- d. F is the midpoint of CH. _____
4. This one-foot ruler can be used to measure every whole-number distance from 1 to 12 inches.

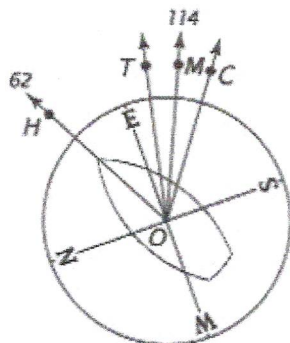


- a. Fill in the blanks on the Ruler Postulate:
The _____ on a line can be numbered so that positive number
_____ measure _____.
- b. Of what segment on this ruler is D the midpoint? _____
- c. Is point D on this ruler the midpoint of CF? Explain why or why not.

Name a pair of points that can be used to measure each of the following distances.

- d. 5 _____
- e. 3 _____
- f. 10 _____

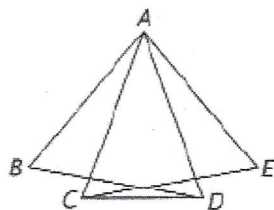
5. This figure shows a circular protractor used in navigation. The coordinates of OH and OM are 62 and 114 respectively.



- a. Find the measure of $\angle HOM$. _____
- b. Find the coordinate of OT given that $\angle HOT = 42^\circ$. _____
- c. Find the measure of $\angle TOM$. _____
- d. Find the measure of $\angle TOC$, given that OM bisects $\angle TOC$.

- e. Find the coordinate of OC. _____

6. From the list below the figure, give the letter of the reason that supports each of the following statements, all of which are true. If none of them do, write "N". (Obviously, you will not use all of them, but you also will not use any of them more than once.)

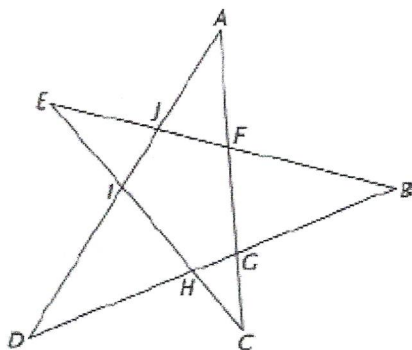


In this figure, $AB=AC=AD=AE=BD=CE$.

- A. A triangle is equilateral iff all of its sides are equal.
- B. If two sides of a triangle are equal, the angles opposite them are equal.
- C. Corresponding parts of congruent triangles are equal.
- D. The angles of a linear pair are supplementary.
- E. An equilateral triangle is also equiangular
- F. A triangle is scalene iff no sides are equal.
- G. SSS

- a. $\triangle ABD$ and $\triangle AEC$ are equilateral. _____
- b. $\triangle ABD$ and $\triangle AEC$ are equiangular. _____
- c. $\triangle ABD \cong \triangle AEC$ _____
- d. $BD=EC$ _____
- e. $\triangle ACD$ is isosceles. _____
- f. $\angle ACD = \angle ADC$ _____

7. The 5 line segments that form this star meet at their endpoints so that $\angle A = \angle B = \angle C = \angle D = \angle E$ and $AD = BE$.



- a. What can you conclude about Triangles AGD and BHE ? _____

b. Why? _____

8. Points A(3, 0), B(5, 2), and C(7, 4) are connected to form $\triangle ABC$.

a. Write the formula for the distance between two points $P_1(x_1, y_1)$ and $P_2(x_2, y_2)$

b. Use the formula to find the exact distances

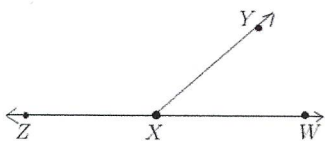
AB= _____

BC= _____

AC= _____

c. What kind of triangle is $\triangle ABC$? _____

9. _____ are opposite rays. $\angle YXZ = (5x + 10)^\circ$ and $\angle YXW = (4x + 17)^\circ$



Find each of the following numbers.

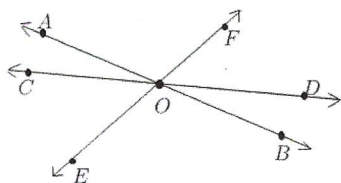
a. $x =$ _____

b. $\angle YXZ =$ _____

c. $\angle YXW =$ _____

10. In the figure below, lines AB, CD, and EF are concurrent at point O. $\angle COE = (12x - 9)^\circ$ and

$\angle FOD = (2x + 21)^\circ$



Find each of the following numbers.

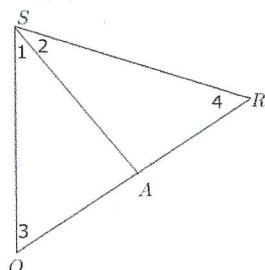
a. $x =$ _____

b. $\angle COE =$ _____

c. $\angle FOD =$ _____

d. If $\angle AOF = 95^\circ$, what is the measure of $\angle AOC$? _____

11. Supply the reasons for the following proof.



Given: A is the midpoint of OR; OS = RS

Prove: SA bisects $\angle OSR$

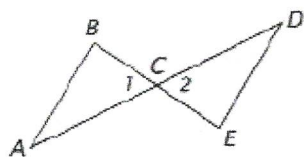
Statements

1. A is the midpoint of OR; OS = RS
2. OA = AR
3. AS = AS
4. $\triangle SOA \cong \triangle SRA$
5. $\angle 1 = \angle 2$
6. SA bisects $\angle OSR$

Reasons

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

12. Write a complete proof for the following.



Given: C is the midpoint of AD and BE; $\angle 1$ and $\angle 2$ are vertical angles.

Prove: AB = DE