

**Final Exam – Level 1 Geometry**

Mrs. King, Ms Tee, Mr. Trainor, Mrs. Cordero, Mr. Simon

NAME \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

**DIRECTIONS:** Please show all your work! **If no work is shown, then no credit will be given.** If you cannot fit your work in the space given, please use extra paper and remember to put your name on it. Neatness is expected if I cannot read an answer, I cannot correct it and it will be marked as incorrect. Points will be taken off if the answer is not in the form specified by the problem. If you do not understand the phrasing of a question please ask. Good luck!

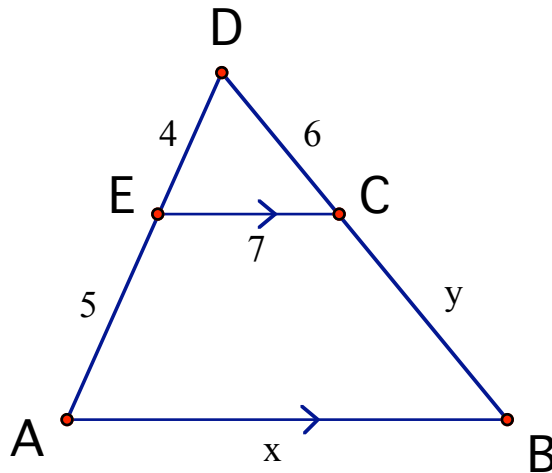
1. The measure of the supplement of an angle is five times that of the angle's complement. Find the measure of the complement.

Angle Measure = \_\_\_\_\_  
Complement = \_\_\_\_\_

2. Find  $x$  and  $y$ .  $\overleftrightarrow{AB} \parallel \overleftrightarrow{EC}$

$x =$  \_\_\_\_\_  
 $y =$  \_\_\_\_\_

- DE = 4
- AE = 5
- DC = 6
- EC = 7
- CB =  $y$
- AB =  $x$

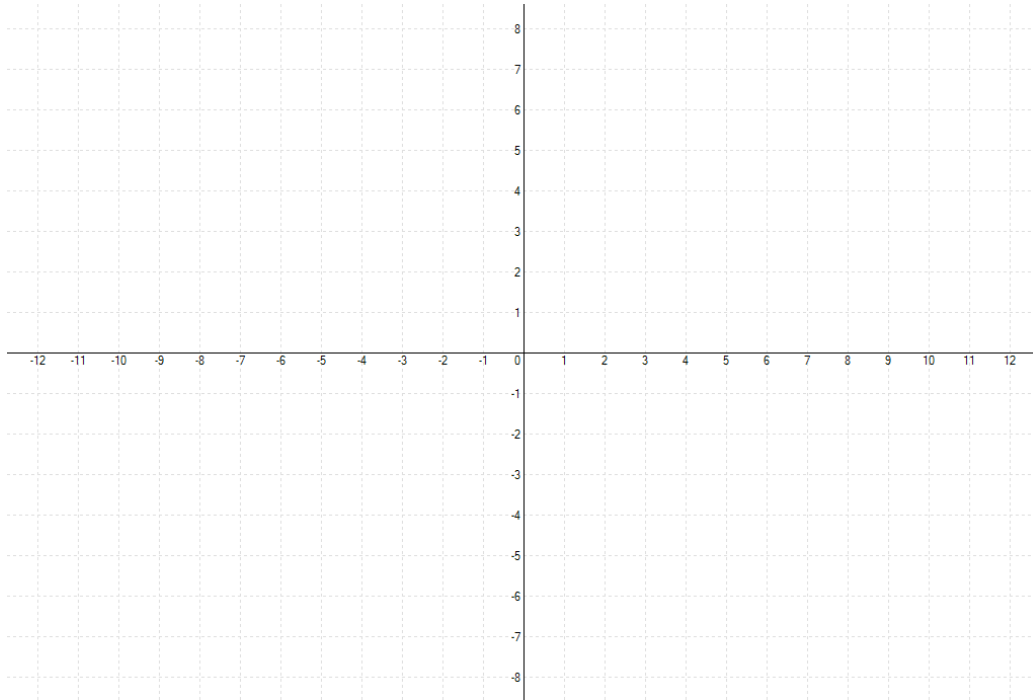


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3. The vertices of a quadrilateral KOSE have coordinates as follows:  
Point K is (3, 2), Point O is (8, 1), Point S is (7, 6) and Point E is (2, 7).  
Draw and label the figure on the grid provided below.



- a. By finding the lengths and slopes of the sides, give the most descriptive name for the quadrilateral.

Name of  
Quadrilatera

| \_\_\_\_\_

- b. Find the midpoints of OE, KS. What other property of the quadrilateral does this show?

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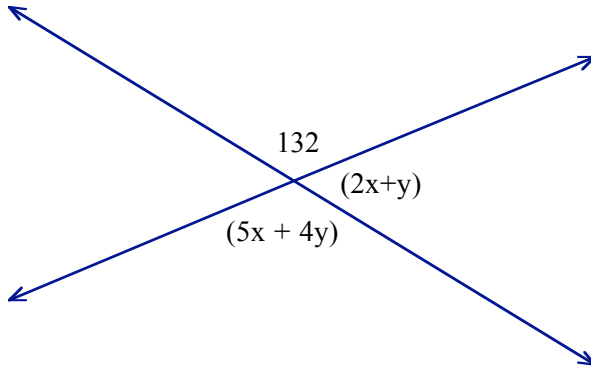
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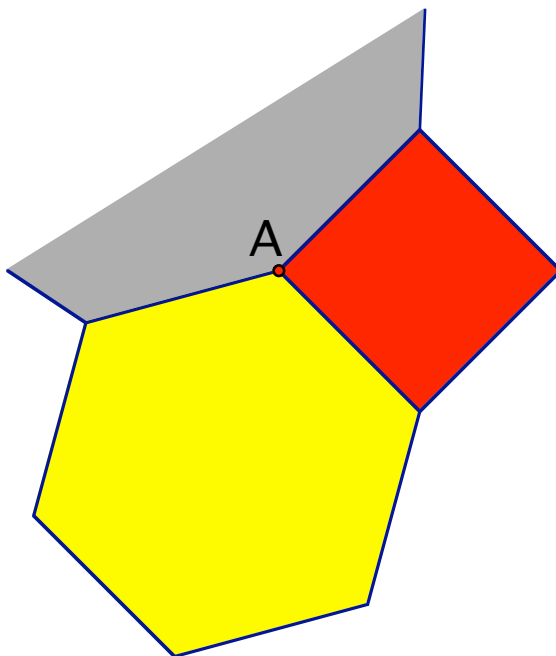
4. Use the diagram below to find  $x$  and  $y$ :

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

$y =$  \_\_\_\_\_



5. 3 regular polygons meet at point A. How many sides does the largest polygon have?



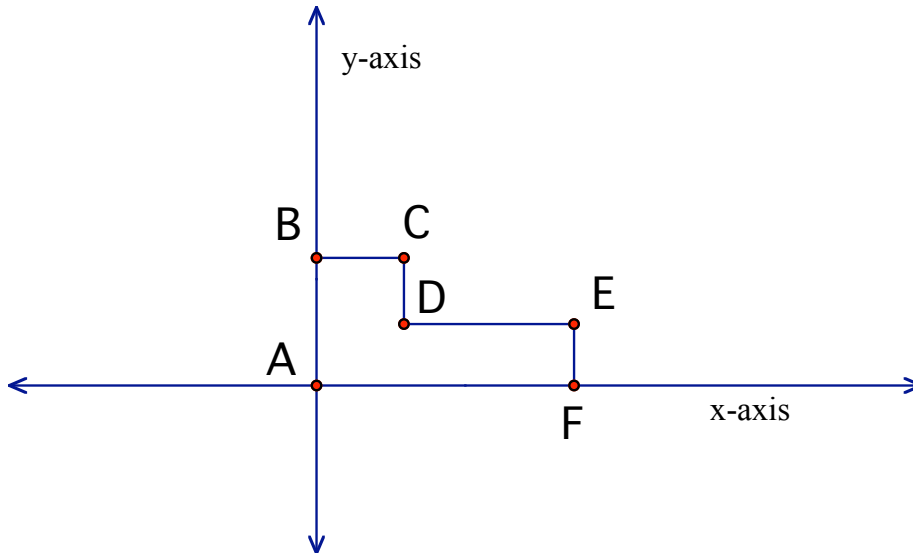
Number of sides = \_\_\_\_\_

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6. L shaped polygon, ABCDEF



- a. Redraw the figure: Rotate  $90^\circ$  clockwise ( $-90^\circ$ ) around point A, followed by a reflection across the y axis. Clearly label the final figure.
  
- b. How can you perform this transformation in one step?

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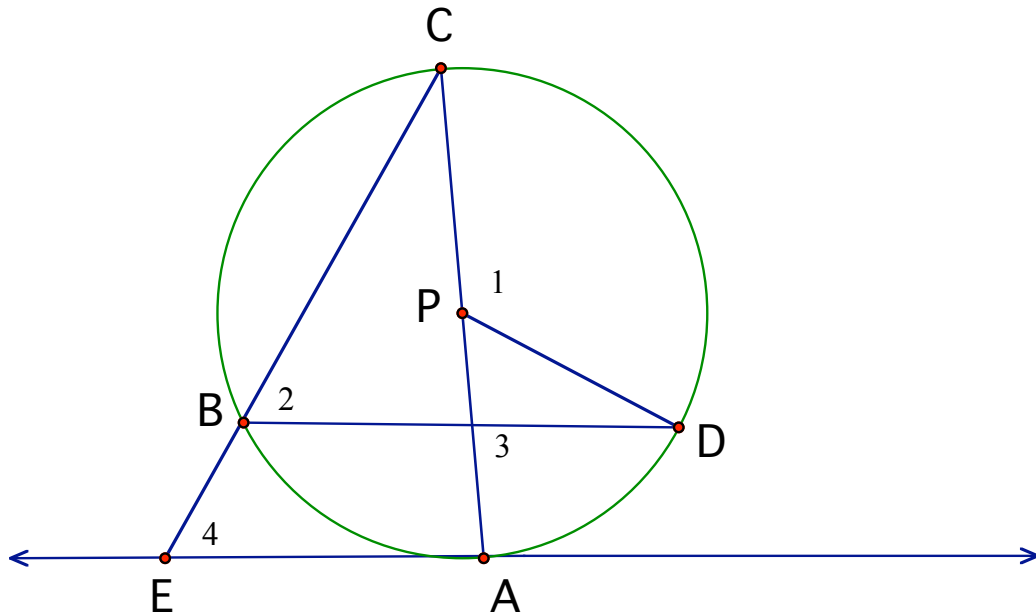
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7. Refer to the figure below.

Given:  $\overline{EA}$  is tangent to the circle P at A

$m\widehat{AB} = 80^\circ$ ,  $m\widehat{CD} = 140^\circ$  and  $\overline{AC}$  is a diameter

- a. Find  $m\angle 1$  \_\_\_\_\_
- b. Find  $m\angle 2$  \_\_\_\_\_
- c. Find  $m\angle 3$  \_\_\_\_\_
- d. Find  $m\angle 4$  \_\_\_\_\_



8. Which of the following is NOT a property of a parallelogram?  
Circle your answer.

- a. Opposite sides are parallel
- b. Opposite angles are congruent
- c. Consecutive angles are supplementary
- d. The diagonals are congruent
- e. Opposite sides are congruent

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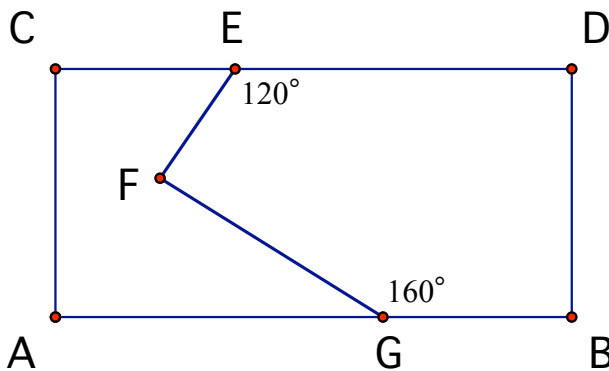
9. An isosceles trapezoid has bases with lengths 16 and 8. The base angles are  $45^\circ$ . Find the perimeter and area of the trapezoid. Leave your answer in simplest radical form.

Trapezoid Perimeter

=

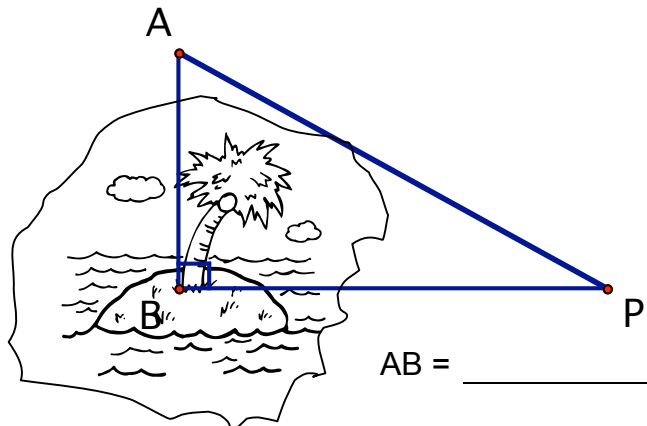
Trapezoid Area = \_\_\_\_\_

10. In the diagram below, ABCD is a rectangle. Find the measure of  $\angle EFG$ .



$m\angle EFG =$  \_\_\_\_\_

11. To find the distance from point A on the shore of a lake to point B on an island in that lake, surveyors locate a point P with  $m\angle PAB = 65^\circ$  and  $m\angle APB = 25^\circ$ . They find that PA measures 352 meters. Find AB to the nearest tenth.



AB = \_\_\_\_\_

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12. All soccer players are athletes

a. Rewrite the above statement in if... then... form.

b. Write the converse, inverse and contrapositive forms of your answer for a.

Converse: \_\_\_\_\_

Inverse: \_\_\_\_\_

Contrapositive: \_\_\_\_\_

c. Make a Venn diagram to illustrate the statement.

d. If the given statement is true, what can you conclude from each of the following statements? If no conclusion can be made, write NONE.

- 1. Molly is an athlete. \_\_\_\_\_
- 2. John plays soccer. \_\_\_\_\_
- 3. Dave is not a soccer player. \_\_\_\_\_
- 4. Rachel is not an athlete. \_\_\_\_\_

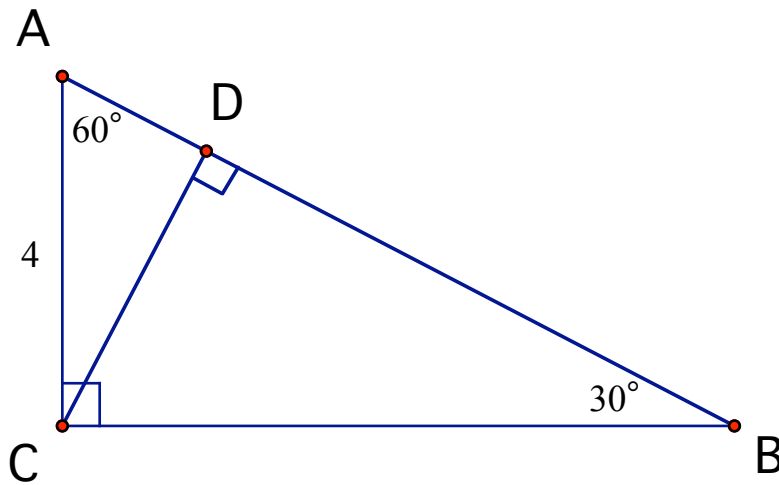
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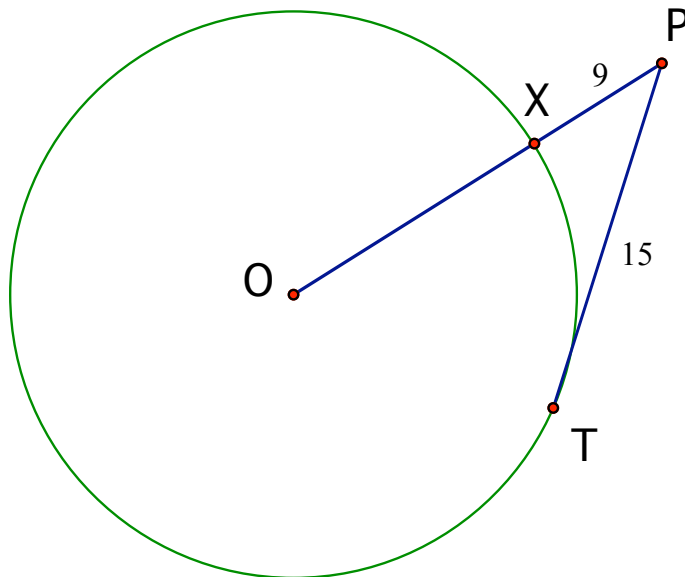
13. Find BD:

BD = \_\_\_\_\_



14. PT is tangent to circle O at point T. Find the radius of the circle O.

XP = 9  
TP = 15



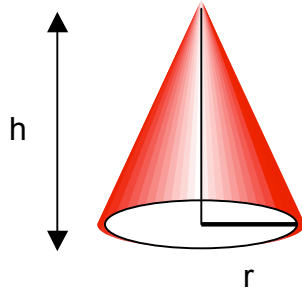
Radius of Circle O = \_\_\_\_\_

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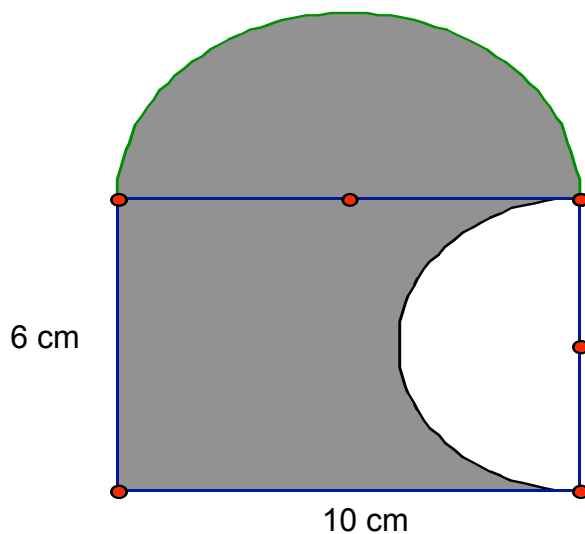
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15. A regular cone of volume 1000 has an altitude twice that of the base radius. The formula for the volume of a cone is  $V = \frac{1}{3}\pi r^2 h$ . What is the radius? Leave the answer in terms of  $\pi$ .



Cone radius = \_\_\_\_\_

16. Find the area of the shaded region.



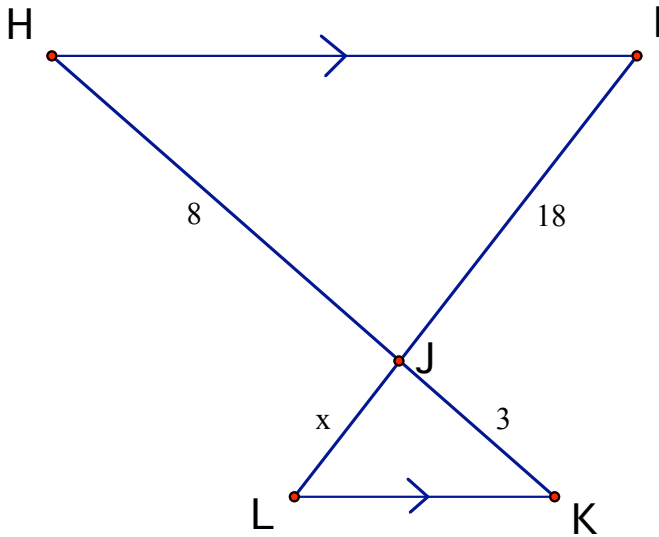
Area of shaded region = \_\_\_\_\_

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17. Find x:



X = \_\_\_\_\_

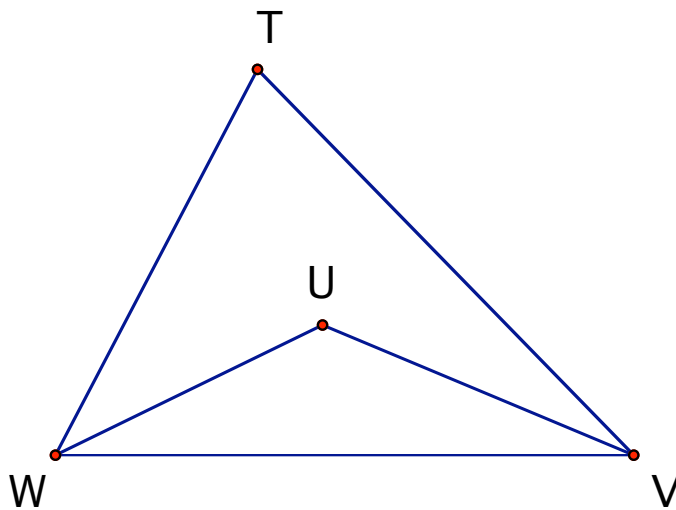
18. Given:

$\overline{WU}$  bisects  $\angle TWV$

$\overline{VU}$  bisects  $\angle TVW$

$\angle T = 80^\circ$

Find  $\angle WUV$



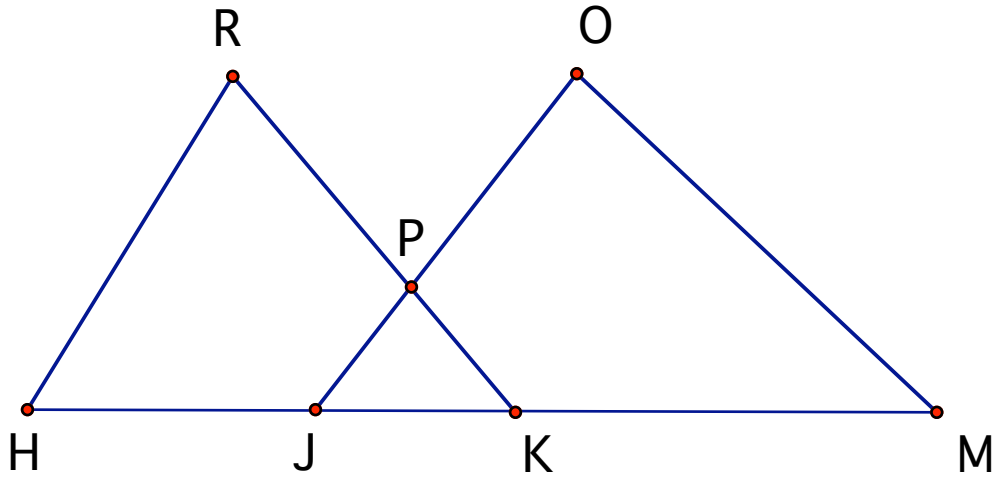
$\angle WUV =$  \_\_\_\_\_

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19.  $\triangle HKR \cong \triangle MJO$ ;  $RP = 12$  ;  $JO = 30$ ;  $JK = 10$  ;  $KM = 24$ ;  $HR = 33$   
How far does Juan walk if he goes from H to K to P to O to M to K?



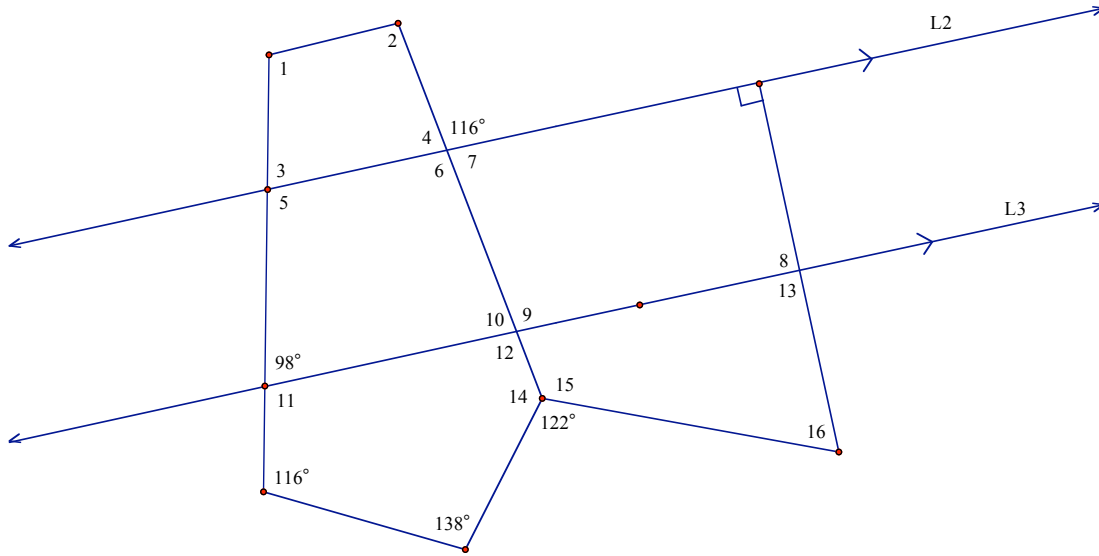
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20. Find the labeled angles:

Given:  $L2 \parallel L3$   
 $\angle 1 \cong \angle 2$



- m∠1 \_\_\_\_\_
- m∠2 \_\_\_\_\_
- m∠3 \_\_\_\_\_
- m∠4 \_\_\_\_\_
- m∠5 \_\_\_\_\_
- m∠6 \_\_\_\_\_
- m∠7 \_\_\_\_\_
- m∠8 \_\_\_\_\_
- m∠9 \_\_\_\_\_
- m∠10 \_\_\_\_\_
- m∠11 \_\_\_\_\_
- m∠12 \_\_\_\_\_
- m∠13 \_\_\_\_\_
- m∠14 \_\_\_\_\_
- m∠15 \_\_\_\_\_
- m∠16 \_\_\_\_\_

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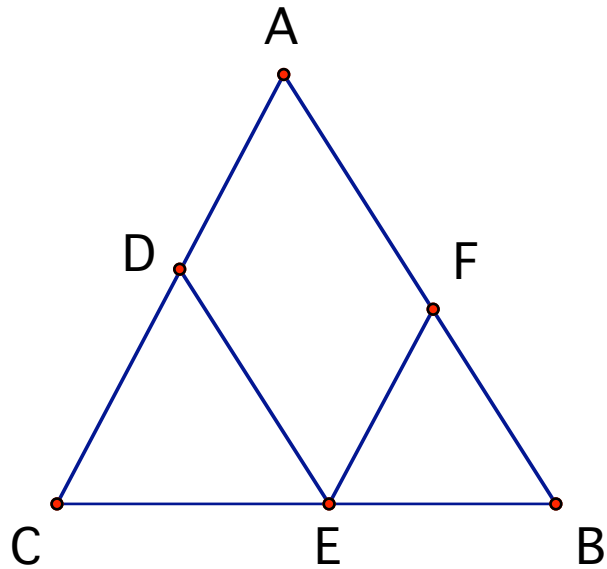
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**PART II: Do 2 out the following 3 proofs.**

21. Given:  $\overline{DE} \parallel \overline{AB}$   
 $\overline{EF} \parallel \overline{AD}$   
 $\triangle ACB$  is isosceles

Prove:  $\triangle CDE \sim \triangle EFB$



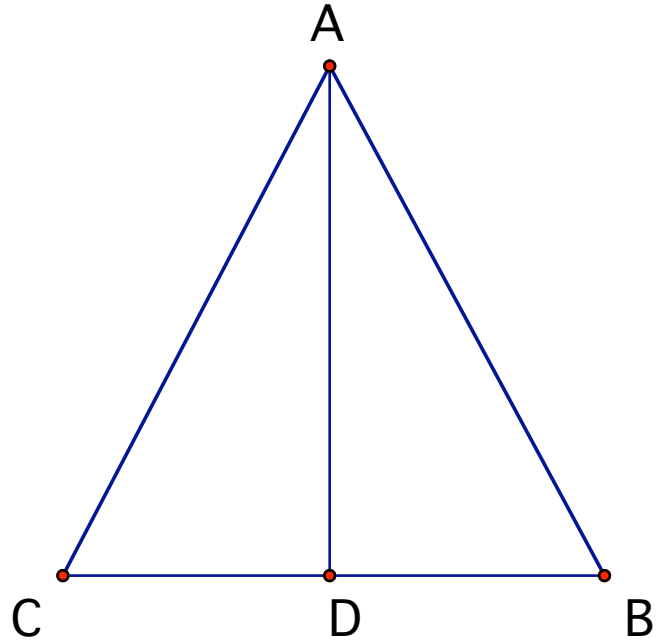
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22. Given: AD is the altitude to base BC  
AD bisects  $\angle BAC$

Prove: AD is the median to BC



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23. Given  $ABCD$  is a parallelogram

$$\overline{AF} \cong \overline{GC}$$

$$\overline{GH} \perp \overline{AC}$$

$$\overline{EF} \perp \overline{AC}$$

Prove:  $\overline{EC} \cong \overline{AH}$

