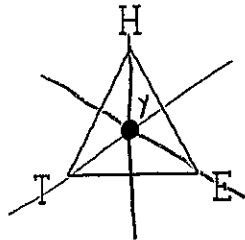


Name: KEY!

Hour: _____

Unit 5 Review

1. Locate the center of symmetry of equilateral triangle HET. Label it as point Y.



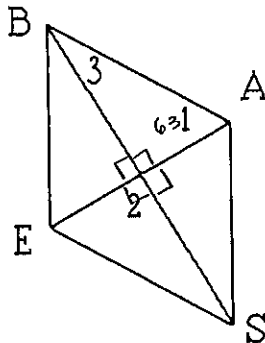
2. **True or False.** Each symmetry line of a regular octagon is the perpendicular bisector of a side of the octagon.

2. true

3. The figure BASE at the right is a rhombus. If $m\angle 1 = 63$, find

a. $m\angle 3$.

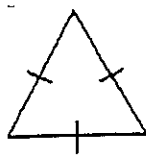
b. $m\angle 2$.



3a. 27°

b. 90°

4. From the information in the drawing below, what type of triangle is pictured? Be as specific as possible.



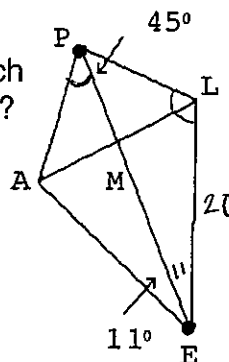
4. Equilateral Triangle (regular)

5. Quadrilateral LEAP at the right is a kite, which ends E and P.

- a. If the length of \overline{EL} is 20, which other segment has length 20?

b. Find $m\angle ELP$.

c. Find $m\angle EPA$.

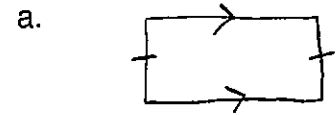


5a. AE

b. 124°

c. 45°

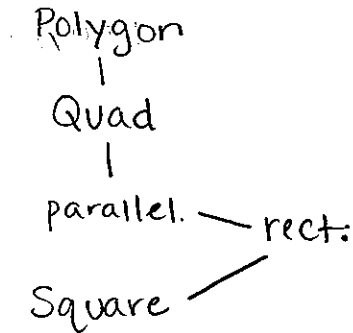
6. a. In the space at the right, draw a quadrilateral in which one pair of sides are parallel and the other pair of sides are congruent. LABEL!



b. What is the name of the quadrilateral that you drew in part (a)? Be as specific as possible.

b. Isosc. Trapezoid

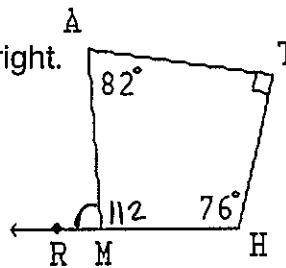
7. Draw the hierarchy relating the following: rectangle, square, polygon, parallelogram, and quadrilateral.



8. **True or False.** Every rectangle is a square.

8. False

9. Refer to the quadrilateral MATH at the right. Find $m\angle AMR$.



9. 68°

10. Find the sum of the measure of the angles in a convex pentagon.

10. 540°

$$\frac{5}{5} \quad (5-2) \cdot 180$$

11. The measures of the angles of triangle are in the extended ratio 3:5:10. Find the measure of the largest angle.

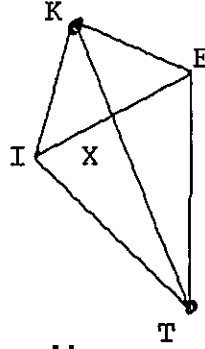
11. 30°

$$3x + 5x + 10x = 180$$

$$\frac{18x}{18} = \frac{180}{18}$$

$$x = 10 \cdot 3$$

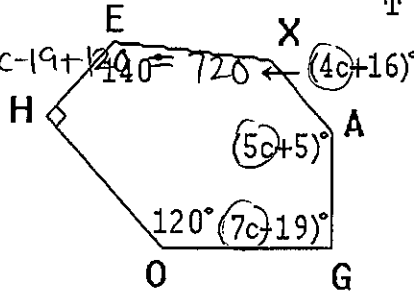
12. Quadrilateral KITE at the right is a kite with ends K and T. Name three distinct pairs of congruent segments.



$$\begin{aligned} 12. \quad & \underline{KE \cong KI} \\ & \underline{IT \cong ET} \\ & \underline{IX \cong XE} \end{aligned}$$

13. In HEXAGO below, find c and $m\angle G$.

$$\begin{aligned} 90 + 140 + 4c + 16 + 5c + 5 + 7c - 19 + 140 &= 720 \\ 352 + 16c &= 720 \\ -352 & \quad -352 \\ \hline 16c &= 368 \\ \hline c &= 23 \end{aligned}$$



$$\begin{aligned} 13. \quad & \underline{c = 23} \\ & \underline{\angle G = 142^\circ} \end{aligned}$$

14. Find the sum of the measures of the angles in a convex 14-gon. $(14-2) \cdot 180$

$$14. \quad \underline{2160^\circ}$$

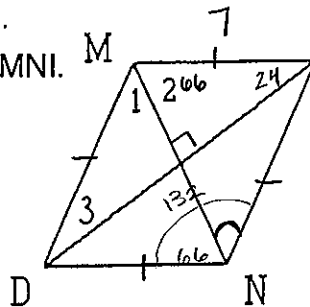
15. **Multiple Choice.** A regular n -gon has symmetry lines that are both angle bisectors and perpendicular bisectors of sides. Then n is:

$$15. \quad \underline{B}$$

- A. even C. neither odd nor even
 B. odd

16. Quadrilateral MIND at the right is a rhombus.

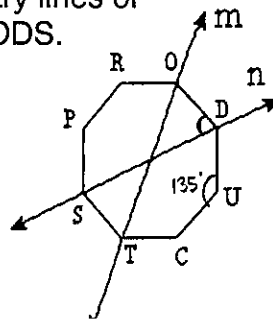
- a. If $MI = 7$, what is MD ?
 b. If $m\angle 2 = 66$, find $m\angle 3$ and $m\angle MNI$.



$$\begin{aligned} 16a. \quad & \underline{7} \\ b. \quad & \underline{m\angle 3 = 24^\circ} \\ & \underline{m\angle MNI = 66^\circ} \end{aligned}$$

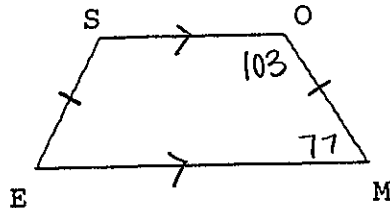
17. In the figure below, m and n are symmetry lines of regular octagon PRODUCTS. Find $m\angle ODS$.

$$(8-2) \cdot 180 = \frac{1080}{8} = 135^\circ$$



17. 67.5°

18. Figure SOME below is a trapezoid with bases SO and EM. If $m\angle O = 103$, find $m\angle E$ and $m\angle S$.



18. $m\angle E = 77^\circ$
 $m\angle S = 103^\circ$

19. Use parallelogram ABCD at the right.

- a. If $MB = 19$ & $AB = 10$, find as many other lengths as you can.

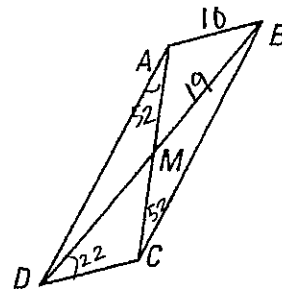
$$DC = 10$$

$$DM = 19$$

- b. If $m\angle DAC = 52$ and $m\angle BDC = 22$, find as many other angles measures as you can.

$$\angle BCA = 52$$

$$\angle ABD = 22$$



20. Todd County in South Dakota has the approximate shape of a rectangle. Its northern border is about 40 miles long.

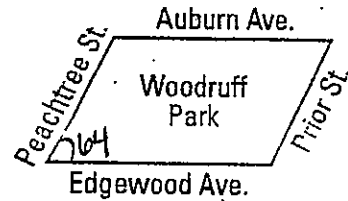
- a. What is the length of its southern border?

≈ 40 miles

- b. What property of parallelograms did you use in part a?

Opposite sides are congruent

21. Woodruff Park in Atlanta, Georgia is bounded by four streets pictured below. Auburn is parallel to Edgewood and Peachtree is parallel to Prior. Peachtree meets Edgewood at angle of 64 degrees.



- a. At what angle does Auburn meet Prior?

64°

- b. What property of parallelograms did you use in part a?

Opposite angles are congruent

In 22-25, use the diagrams. Are the markings a sufficient condition for the quadrilateral to be a parallelogram? If your answer is yes, provide the sufficient condition.

22.



No, n.e.i.

23.



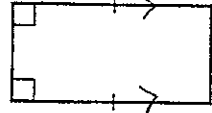
Yes, opp. sides are \cong

24.



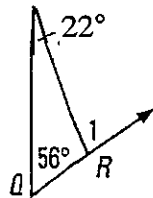
No, n.e.i.

25.



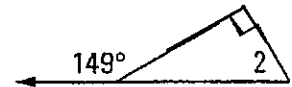
Yes, opp. sides both \parallel & \cong

26. Find $m\angle 1$.



$$56 + 22 = \boxed{78^\circ}$$

27. Find $m\angle 2$.



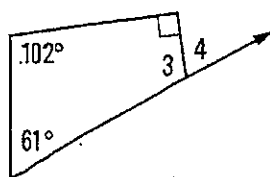
$$90 + \angle 2 = 149$$

$$\angle 2 = \boxed{59^\circ}$$

28. Find $m\angle 3$ & $m\angle 4$.

$$\angle 3 = 107^\circ$$

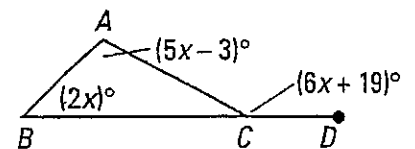
$$\angle 4 = 73^\circ$$



$$360 - 102 - 61 - 90 = 107$$

$$\underline{\quad 73}$$

29. Find x and $m\angle ACB$.



$$2x + 5x - 3 = 6x + 19$$

$$7x - 3 = 6x + 19$$

$$-6x + 3 - 6x + 3$$

$$1x = 22 \rightarrow \boxed{x = 22}$$

$$\rightarrow 6 \cdot 22 + 19 = 151$$

$$180 - 151 = 29$$

$$\boxed{\angle ACB = 29^\circ}$$