

Name: Key

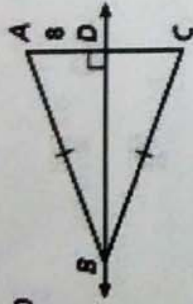
Date: _____

Period: _____

Chapter 6 Quiz Review

Find each measure.

1. **CD**

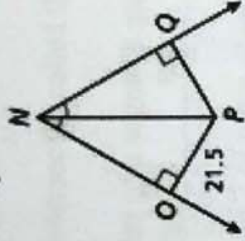


$$AD = DC$$

$$\boxed{8 = DC}$$

CONV. \perp BISECTOR THM

2. **PQ**

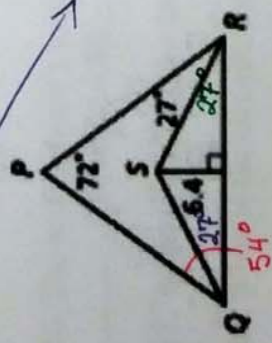


$$OP = PQ$$

$$\boxed{21.5 = PQ}$$

\perp BISECTOR THM

4. Find $m\angle SQP$. Then, find the distance from S to \overline{PR} .



$$72 + 27 + 27 = 126$$

$$m\angle PQR = 180 - 126 = 54$$

$$m\angle SQP = \frac{54}{2} = \boxed{27^\circ}$$

\perp BISECTOR THM
distance from S to \overline{PR} : $\boxed{6.4}$

INCENTER THM

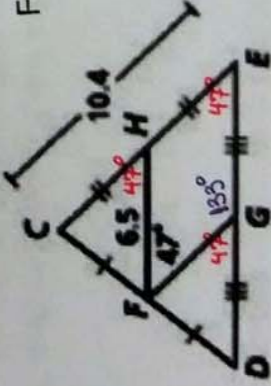
5. Find:

a. **FG**

$$FG = \frac{1}{2} CE$$

$$= \frac{1}{2} (10.4)$$

$$= \boxed{5.2}$$



b. **DE** = 2 FH

$$= 2(6.5)$$

$$= \boxed{13}$$

d. $m\angle FGE$

$$\boxed{47^\circ}$$

c. $m\angle CED$

$$\boxed{47^\circ}$$

e. $m\angle FGD$

$$180 - 47 = \boxed{133^\circ}$$

6. Write the equation of the perpendicular bisector of the segment with endpoints (1, 4) and (-5, -2). Write your answer in **slope-intercept** form.

STEP 1: $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) = \left(\frac{1-5}{2}, \frac{4-2}{2} \right) = \left(\frac{-4}{2}, \frac{2}{2} \right) = (-2, 1)$

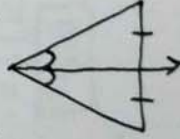
STEP 2: $m_{\text{orig}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 4}{-5 - 1} = \frac{-6}{-6} = 1$

STEP 3: $m_{\perp} = -1$

STEP 4: $y - y_1 = m(x - x_1) \rightarrow y - 1 = -1(x - (-2)) \rightarrow y - 1 = -1(x + 2)$
 $\rightarrow y - 1 = -x - 2$
 $\rightarrow \boxed{y = -x - 1}$

vocabulary:

7. The point of concurrency of the angle bisectors in a triangle is called the INCENTER
8. The point of concurrency of the perpendicular bisectors in a triangle is called the CIRCUMCENTER
9. Three or more lines that intersect at one point are called CONCURRENT
10. The point where three or more lines intersect is called the POINT OF CONCURRENCY
11. A line that passes through the midpoint of a segment and is perpendicular to the segment is called the PERPENDICULAR BISECTOR of the segment.
12. When a point is the same distance from 2 or more objects, the point is said to be EQUIDISTANT from the objects.
13. The circumcenter of a triangle is equidistant from the 3 VERTICES of the triangle.
14. The incenter of a triangle is equidistant from the SIDES of the triangle.
15. The endpoint of a midsegment of a triangle are the MIDPOINTS of the sides of the triangle.
16. The midsegment's length is HALF the length of the side of the triangle and is always PARALLEL to that side. (*hint: use the Triangle Midsegment Theorem to fill in these blanks*)
17. When is the incenter located outside the triangle? NEVER
18. When is the circumcenter located on the triangle? SOMETIMES
19. Can the circumcenter be located outside the triangle? If so, in what case? YES, OBTUSE Δs
20. Can an angle bisector of an angle of a triangle also bisect the opposite side of the triangle? If so, draw a diagram to show. If not, explain why not.



Formulas (You will need to remember these, you will use them!)

21. What is the midpoint formula?

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

22. What is the slope formula?

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

23. What is the slope-intercept form of a line?

$$y = mx + b$$

24. What is the point-slope form of a line?

$$y - y_1 = m(x - x_1)$$

25. What is the distance formula?

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$