

Geometry, Chapter 5 Test

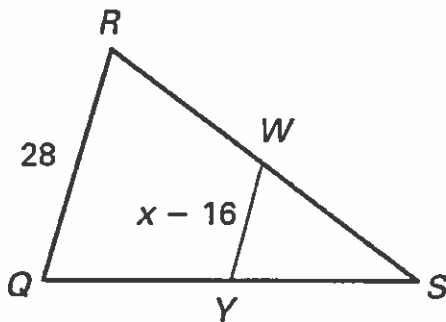
Completion

Complete each statement.

1. The angle bisectors of a triangle are concurrent at a point called the _____.

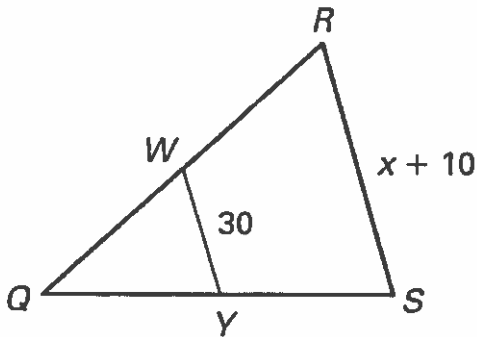
Short Answer

2. \overline{WY} is the midsegment of $\triangle QRS$. Find the value of x .



3. The perpendicular bisectors of a triangle all pass through what point?

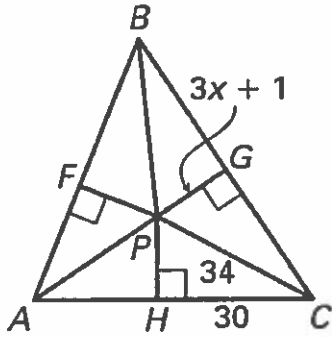
4. \overline{WY} is the midsegment of $\triangle QRS$. Find the value of x .



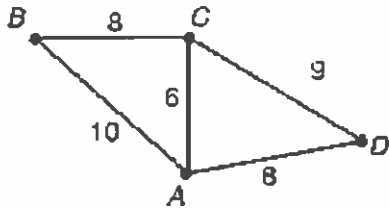
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5. (BONUS) Find the value of x that makes P the incenter of the triangle.



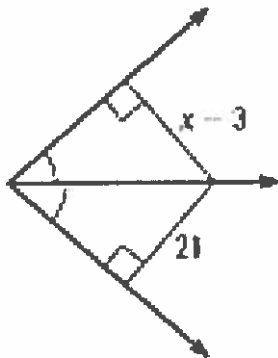
6. Refer to the figure. What is the largest angle that is part of a triangle, in the figure?



7. A triangle has one side of length 10 and another of length 6. Describe the possible lengths of the third side.

Find the value of x .

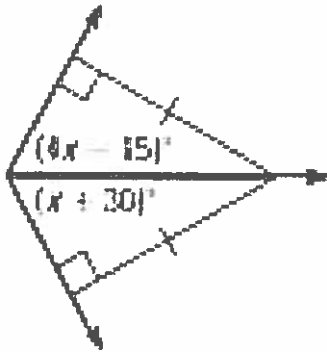
8.



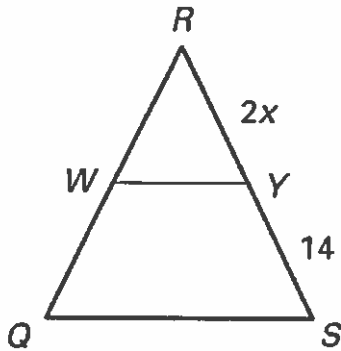
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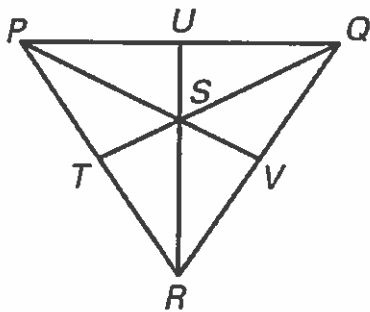
9.



10. \overline{WY} is the midsegment of $\triangle QRS$. Find the value of x .



11. Point S is the centroid of $\triangle PQR$. Use the given information to find the value of x .



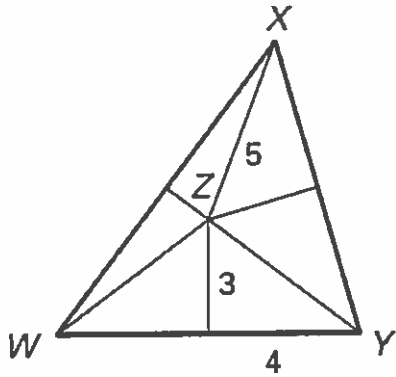
$$RS = 4x + 1 \text{ and } SU = 3x - 4$$

Name: _____

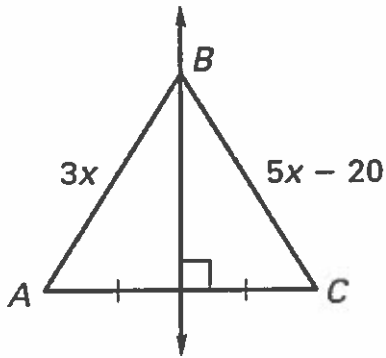
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12. In the diagram, the perpendicular bisectors of $\triangle WXY$ meet at point Z. Find the indicated measure.

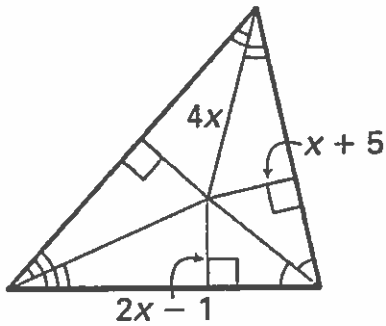
WZ



13. Find the value of x .



14. Find the value of x .

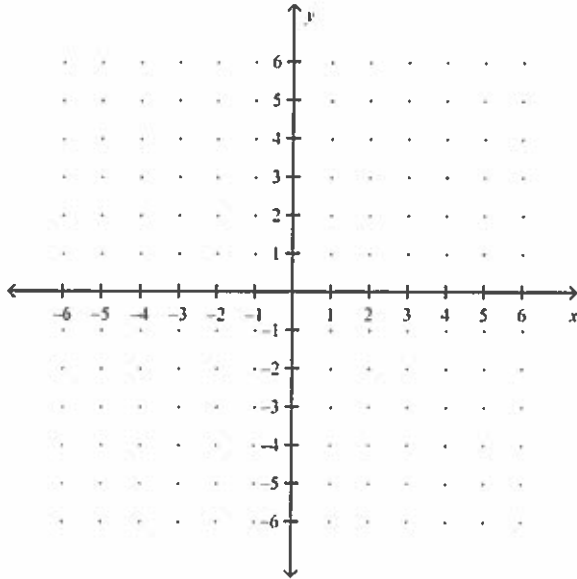


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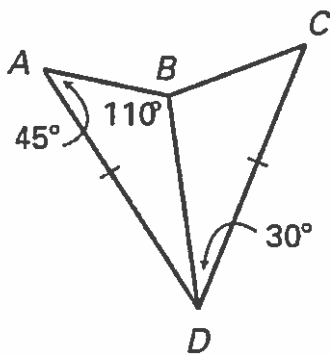
15. Find the coordinates of the centroid P of $\triangle STU$.

$S(2, 5)$, $T(5, -2)$, $U(-1, -6)$



16. Complete with $<$, $>$, or $=$.

AB ? BC

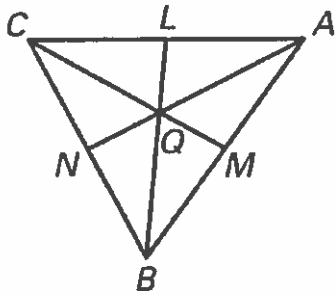


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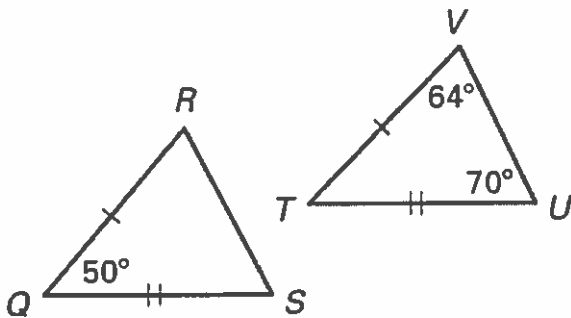
17. In $\triangle ABC$, Q is the centroid.

$QC = 12$. Find CM .



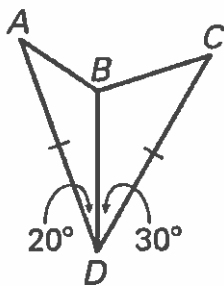
18. Complete with $<$, $>$, or $=$.

RS ? VU



19. Complete with $<$, $>$, or $=$.

AB ? BC



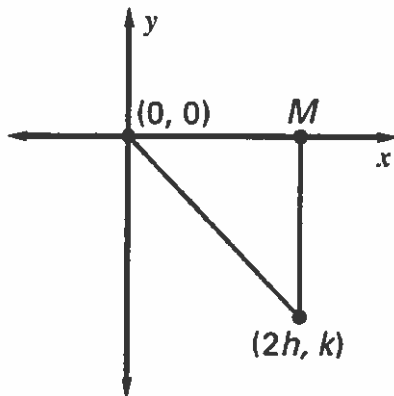
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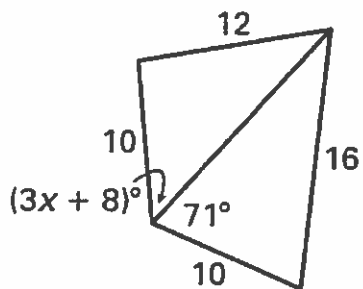
20. Is it possible to construct a triangle with the given side lengths?

4, 6, 10

21. Find the coordinates of point M in the figure.



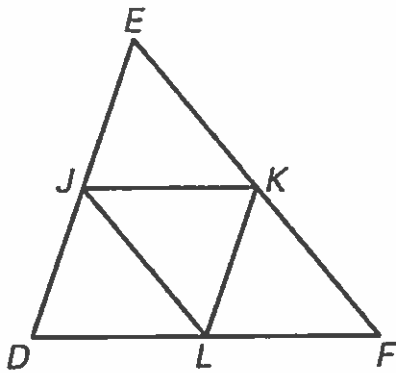
22. Use the Hinge Theorem or its converse and properties of triangles to write and solve an inequality to describe a restriction on the value of x .



Name: _____

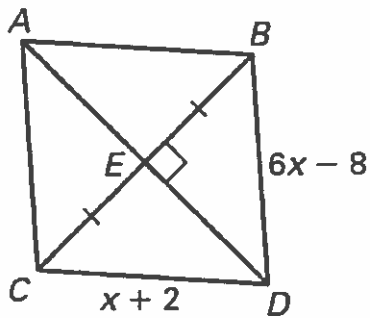
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23. Use $\triangle DEF$, where J , K , and L are midpoints of the sides.



If $DF = 18x - 6$ and $JK = 3x + 11$, what is JK ?

24. Find the value of x .

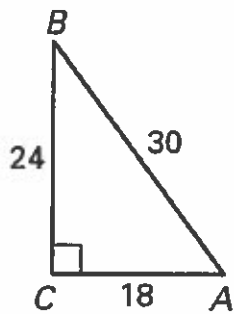


25. The altitudes of a triangle are concurrent. What is the name of their common point?

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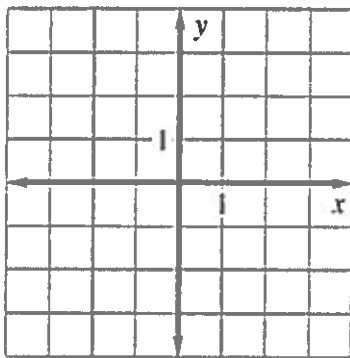
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26. List the angles and sides in order from smallest to largest.



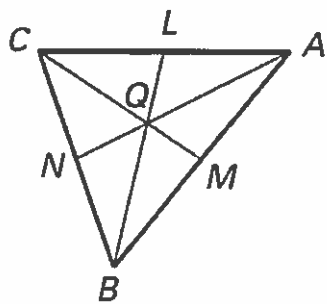
27. Place the figure in a coordinate plane in a convenient way. Give the coordinates of each vertex.

Isosceles right triangle:
Leg length is 3.



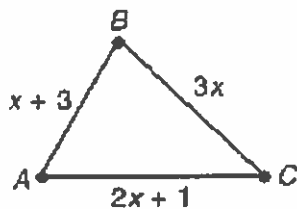
28. In $\triangle ABC$, Q is the centroid. Find the indicated length.

$QC = 12$. Find QM .



Other

29. Using the Triangle Inequality Theorem, solve for all possible values of x .



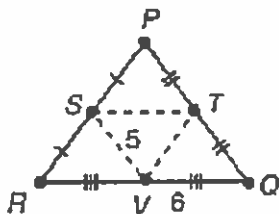
Multiple Choice

Identify the choice that best completes the statement or answers the question.

____ 30. In a triangle, a segment connecting the midpoints of two sides of the triangle is called a ____.

- a. shortcut
- b. centroid
- c. vertex
- d. midsegment

____ 31. For the triangle shown, $VS = 5$ and $VQ = 6$. Then $PQ =$ ____.



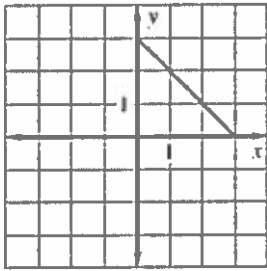
- a. 12
- b. 11
- c. 10
- d. 5

**Geometry, Chapter 5 Test
Answer Section****COMPLETION**

1. Incenter

SHORT ANSWER

2. 30
3. Circumcenter
4. 50
5. $x = 5$
6. $\angle BCA$
7. $4 < x < 16$
8. 24
9. 15
10. 7
11. $x = \frac{9}{2}$
12. 5
13. 10; Perpendicular Bisector Theorem
14. 6
15. $(2, -1)$
16. $<$
17. 18
18. $>$
19. $<$
20. no
21. $(2h, 0)$
22. $x < 21$
23. 18
24. 2
25. Orthocenter
26. $\angle B, \angle A, \angle C$



27.

(0, 0), (0, 3), (3, 0)

28. 6

OTHER

29. $x > \frac{1}{2}$

MULTIPLE CHOICE

30. D

31. C