

Chapter Test

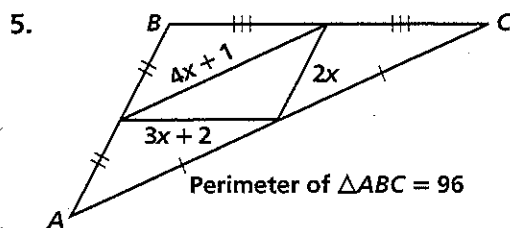
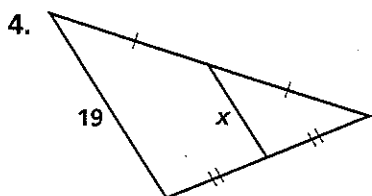
Form A

Chapter 5

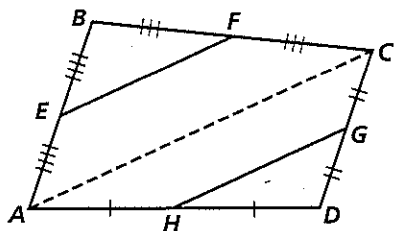
Write (a) the inverse and (b) the contrapositive of each statement, and determine the truth value for each.

1. If a triangle has three congruent sides, then it is equiangular.
2. If an isosceles triangle is obtuse, then the vertex angle is an obtuse angle.
3. If two lines are parallel, then they do not intersect.

Find the value of x .



6. What can you conclude from the diagram below?



For Exercises 7 and 8, identify the pair of statements that forms a contradiction.

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| <p>7. I. $\angle A$ and $\angle B$ are acute angles.
 II. $m\angle A = 45$
 III. $\angle A$ and $\angle B$ are supplementary.</p> | <p>8. I. $ABCD$ is a quadrilateral.
 II. $ABCD$ is a square.
 III. $m\angle A > m\angle D$</p> |
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List the angles of each $\triangle BCD$ from smallest to largest.

9. $BC = 5, CD = 8, BD = 11$
10. $BC = 4, CD = 3.9, BD = 4.2$
11. $BC = 27, CD = 29, BD = 8$
12. During lunch, Juan was making triangles with some straws. If he has a 3-in. straw and a 4-in. straw, which straw can he *not* use to form a triangle?
A. 5-in. straw B. 4-in. straw C. 7-in. straw D. 6-in. straw

Chapter Test (continued)

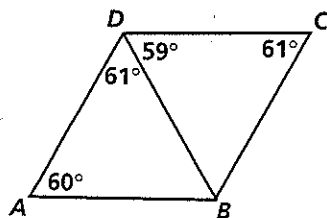
Form A

Chapter 5

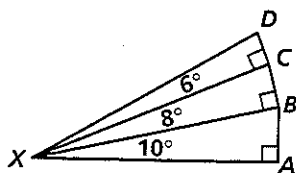
13. Use indirect reasoning to show that an equilateral triangle cannot have a right angle.
14. The base of an isosceles triangle has length 10. What can you say about the length of the legs?
15. Two sides of a triangle have lengths of 12 and 18. The length of the third side can be any number between ? and ?.

Classify each point of concurrency described as being *inside*, *outside*, or *on* the triangle.

16. the orthocenter of a right triangle
17. the centroid of an acute triangle
18. the circumcenter of an obtuse triangle
19. In the figure below, which segment is the longest?



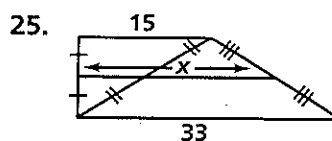
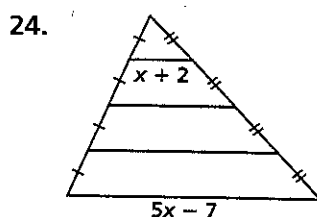
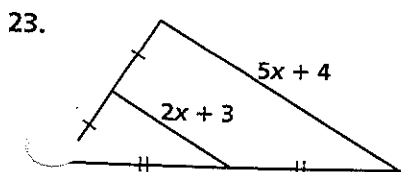
20. In the figure below, put the segments \overline{XB} , \overline{XC} , and \overline{XD} in order from greatest measure to least measure.



Find the center of the circle that circumscribes each $\triangle ABC$.

21. $A(0, 0)$, $B(0, 8)$, $C(10, 8)$
22. $A(-7, 3)$, $B(9, 3)$, $C(-7, -7)$

Find the value of x .



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