

6.1 - 6.5 TEST Review

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Special Segments	1, 2 - 5	14 - 16	25 - 30
Slope	1b		
Point-Slope Form	1c		
Perpendicular Slope	1d		
Point of Concurrency	2 - 5		
Angle & Side Restrictions		6 - 9	32 - 34
Solving Inequalities		6 - 9	32 - 34
Simplifying Radicals	10		
Isosceles Triangles		6 - 9	32 - 34
Parallel Lines: AIA Thm		13	34
Midsegment & Midsegment Triangle	17 - 24		
Counterexamples			25 - 30
Midpoint Formula	1a		
Triangle Sides/Angles shortest to longest	11, 17 - 24	12, 14 - 16, 31	13
Distance Formula	31		
Classifying Triangles	31		

1. In $\triangle ABC$, \overline{AD} is a median, and $A(-2, 2)$, $B(2, 6)$, and $C(6, -4)$.

A. (4, 1) What is the coordinate of point D?

B. $-\frac{1}{6}$ What is the slope of \overline{AD} ?

C. _____ Find the equation in point slope form of \overline{AD} .

$$y - 1 = -\frac{1}{6}(x - 4)$$

D. -1 Find the slope of the altitude from vertex C.

Match:

2. D Circumcenter

A Altitude

3. C Centroid

B Angle Bisector

4. A Orthocenter

C Median

5. B Incenter

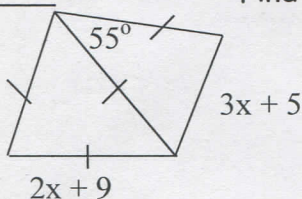
D Perpendicular Bisector

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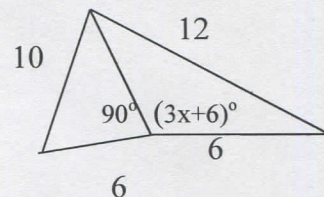
Solve:

6. $-\frac{5}{3} < x < 4$

Find restrictions on x.



7. $x > 28$ Find the restrictions on x

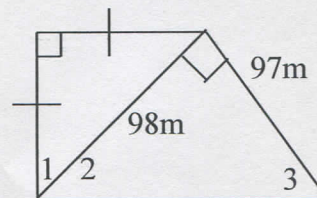


8. Find x = 31



9. _____ Use triangle inequalities to compare $\angle 1$, $\angle 2$ and $\angle 3$.

$m\angle 1 < m\angle 2 < m\angle 3$



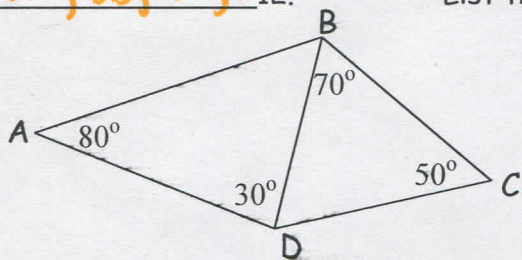
10. Yes, $\triangle < > \cong \text{Thm}$ Can you make a triangle out of lengths $8\sqrt{6}$, $5\sqrt{15}$, and $7\sqrt{3}$? Why?

\overline{BC} , \overline{AC} , \overline{AB}

11. In $\triangle ABC$ $m\angle A = (3x)^\circ$, $m\angle B = (x + 12)^\circ$ and $m\angle C = (x + 3)^\circ$. List the sides of the triangle from longest to shortest.

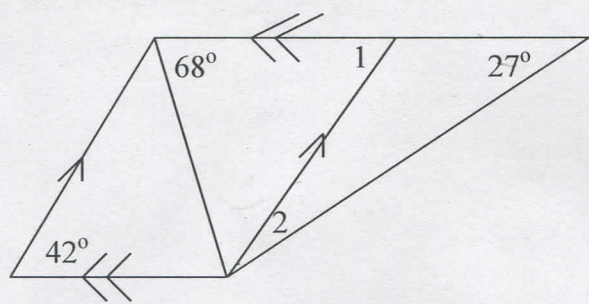
\overline{AB} ; \overline{AD} ; \overline{DB} ; \overline{BC} ; \overline{DC}

12. List the sides of the whole figure from shortest to longest.

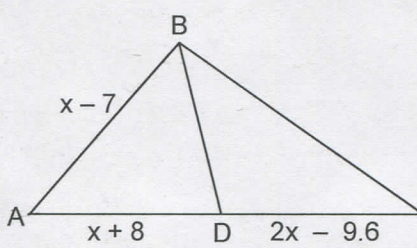


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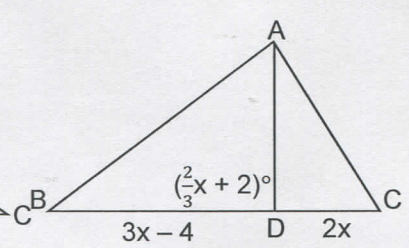
13. $m\angle 1 = 42^\circ$
 $m\angle 2 = 15^\circ$



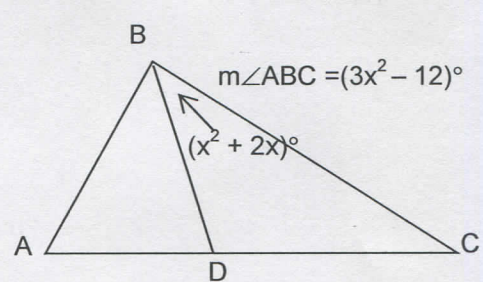
14. Find AB if \overline{BD} is a median of $\triangle ABC$.
10.6



15. Find BC if \overline{AD} is an altitude of $\triangle ABC$.
656



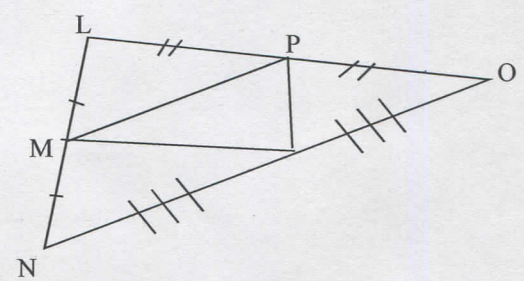
16. Find $m\angle ABC$ if \overline{BD} is an angle bisector of $\triangle ABC$.
96 degrees



17 - 24: Use the diagram to the right to find the required values.

$LO = 6x + 4$, $LM = 4x$, $MP = 3x$, and $NO = 42$ $m\angle LPM = 52^\circ$ $m\angle L = 44^\circ$

- 17. $x = 7$
- 18. $LN = 56$
- 19. $MP = 21$
- 20. $m\angle O = 52^\circ$
- 21. $m\angle N = 84^\circ$
- 22. $LO = 46$
- 23. $LP = 23$
- 24. $m\angle LMP = 84^\circ$



Sometimes, Always or Never: Prove an Always, counterexample for Never, and both for Sometimes. Words or pictures are acceptable.

S 25. A right triangle is isosceles.

S 26. An isosceles triangle is equilateral.

A 27. In an obtuse triangle the circumcenter is outside the triangle.

A 28. In an equiangular triangle the centroid is equidistant from the sides.

S 29. An acute triangle is isosceles.

S 30. The incenter is the center of gravity.

Isosceles
4A

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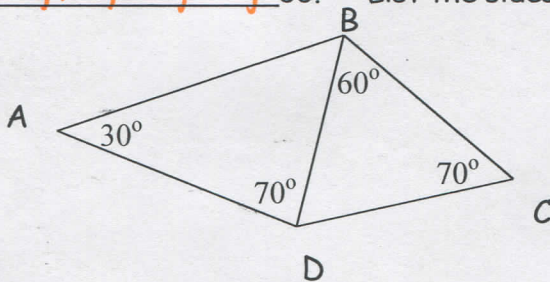
31. Classify the triangle with coordinates $A(4, -2)$, $B(-6, 1)$ and $C(14, 1)$ as scalene, isosceles, or equilateral. What is the largest angle of the triangle? (show calculations)

\overline{AB} ; \overline{BC} ; \overline{AC}

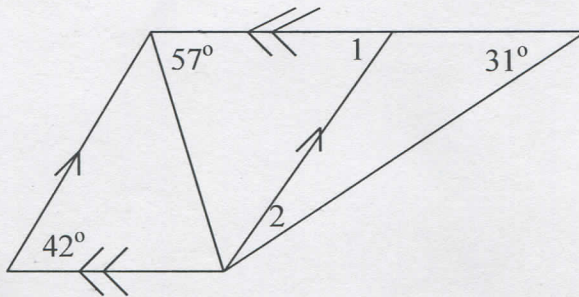
32. In $\triangle ABC$ $m\angle A = 49^\circ$, $m\angle B = 21^\circ$ and $m\angle C = 110^\circ$. List the sides of the triangle from longest to shortest.

\overline{BC} ; \overline{DC} ; \overline{BD} ; \overline{AB} ; \overline{AD}

33. List the sides for the whole figure from shortest to longest.



34. $m\angle 1 = 42^\circ$
 $m\angle 2 = 11^\circ$



Chapter 6 Test Study Guide:

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| 1) Triangle Inequality Theorem | 12) POC's |
| 2) Midsegment Triangle Theorem | 13) POC's |
| 3) Triangle Inequality Theorem | 14) POC's |
| 4) Special Segments & their special properties | 15) Straw Activity: What makes a triangle work? |
| 5) Special Segments & their special properties | 16) Straw Activity: What makes a triangle work? |
| 6) Triangle Inequality Theorem | 17) Special Segments |
| 7) A) Distance formula & Triangle Inequality Theorem | 18) Special Segments |
| B) Midpoint formula & Special Segments | 19) Special Segments |
| C) Perpendicular slope & Special Segments | 20) Special Segments |
| 8) Special Segments | 21) Special Segment Constructions & POC (watch videos on the website!) |
| 9) Special Segments & POC's | |
| 10) POC's | |
| 11) POC's | |