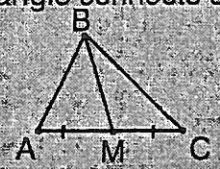
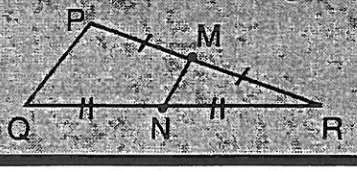
Special Segments in Triangles

A median of a triangle connects a vertex to the midpoint of the opposite side.



An altitude of a triangle is a segment drawn from a vertex perpendicular to the opposite side (or an extension of it).

A midline of a triangle connects two midpoints of two sides and is parallel to the third side. Its length is also half the length of the third side.

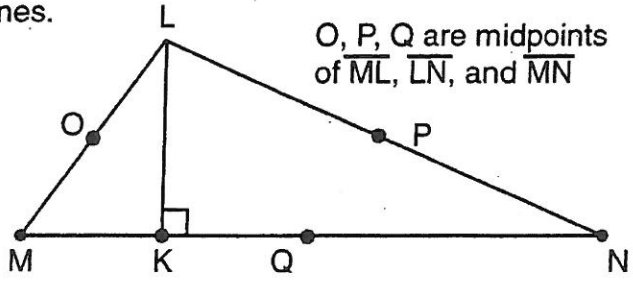


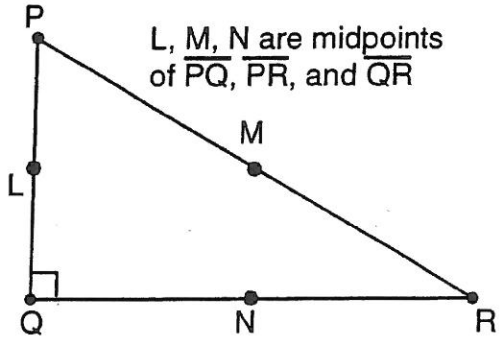
$\overline{MN} \parallel \overline{PQ}$

$MN = \frac{1}{2}PQ$

Refer to the diagrams. Find the answers in the decoder to reveal the name of the last major league baseball field to install lights for night games.

1. $\overline{LK}$ is an _____.
2. $\overline{MP}$ is a _____.
3. The median from L is segment _____.
4. $\overline{PQ}$ is a _____.
5. The median from N is segment _____.
6. If OP = 10 then segment _____ = 20.





7. The altitude from P is segment _____.
8. If PL = 10, then the length of LQ is _____.
9. If PQ = 30, then the length of MN is _____.
10. If PM = 20, then the length of LN is _____.
11. Segment LN is half the length of segment _____.
12. ΔPQR is a _____ triangle.
13. If LM = 15, then the length of QR is _____.
14. If the perimeter of ΔPQR = 50 units, the perimeter of ΔLMN would be _____ units.

10	15	20	25	30	median	midline	altitude	PQ	PR	MN	LQ	ON	right	isosceles
A	C	D	E	F	G	H	I	L	N	O	R	W	Y	Z

5	3	1	2	7	14	12		13	1	14	7	10		

1	11	9	4	1	9	8	2	6	

Name _____ Class _____ Date _____

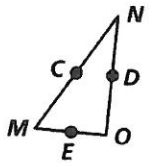
Practice 5-1

Midsegments of Triangles

Use the diagrams at the right to complete the exercises.

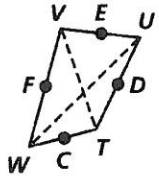
1. In $\triangle MNO$, the points C, D, and E are midpoints. $CD = 4$ cm, $CE = 8$ cm, and $DE = 7$ cm.

   a. Find MO. **b.** Find NO. **c.** Find MN.



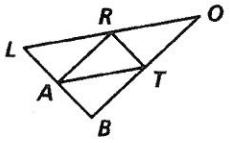
2. In quadrilateral $WVUT$, the points F, E, D, and C are midpoints. $WU = 45$ in. and $TV = 31$ in.

   a. Find CD. **b.** Find CF. **c.** Find ED.



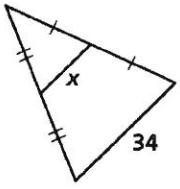
3. In $\triangle LOB$, the points A, R, and T are midpoints. $LB = 19$ cm, $LO = 35$ cm, and $OB = 29$ cm.

   a. Find RT. **b.** Find AT. **c.** Find AR.



Find the value of the variable.

4.



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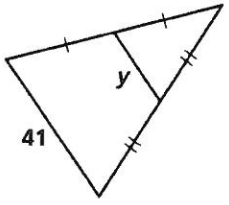

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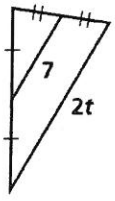
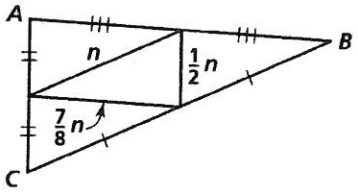
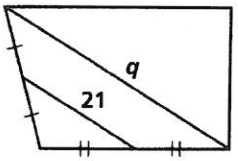


7. Perimeter of $\triangle ABC = 32$ cm



8.



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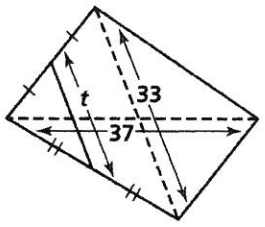
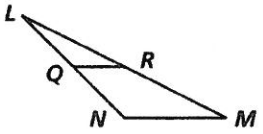


10. $\overline{QR}$ is a midsegment of $\triangle LMN$.

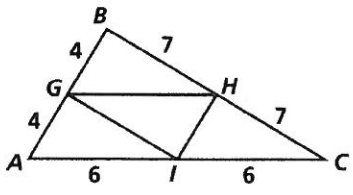
    a. $QR = 9$. Find NM.

    b. $LN = 12$ and $LM = 31$. Find the perimeter of $\triangle LMN$.



Use the given measures to identify three pairs of parallel segments in each diagram.

11.



12.