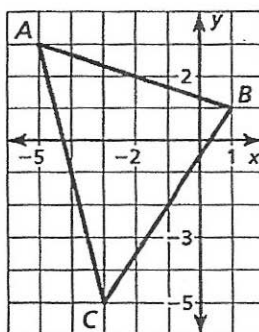


In Exercises 1–4, use the graph of triangle ABC.

Write the following coordinates $A(\quad , \quad)$ $B(\quad , \quad)$ $C(\quad , \quad)$



1. Find the midpoint D of \overline{AB} , Find the midpoint E of \overline{CB} ,

2. Draw the midsegment \overline{DE} in the figure to the right.

3. Write the following coordinates:

$D(\quad , \quad)$ $E(\quad , \quad)$

4. Show that \overline{DE} is parallel to \overline{AC} and that $DE = \frac{1}{2} AC$

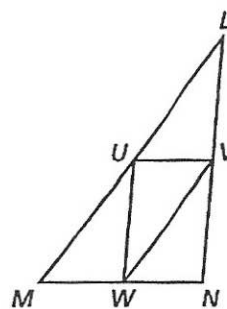
a) Show $\overline{DE} \parallel \overline{AC}$

b) Show $DE = \frac{1}{2} AC$

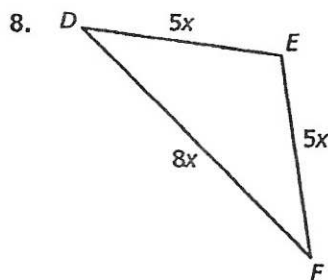
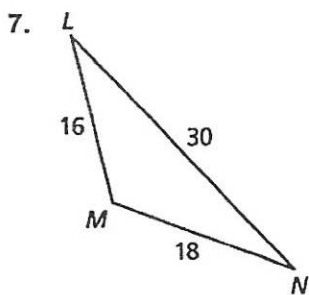
In Exercises 5–8, use triangle LMN where U , V , and W are the midpoints of the sides.

5. When $LV = 9$, what is UW ? When $MN = 12$ what is UV ?

6. When $LU = 2(x - 5)$ and $VW = 8 - x$, what is LM ?

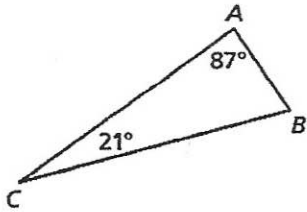


In Exercises 7 and 8, list the angles of the given triangle from smallest to largest.

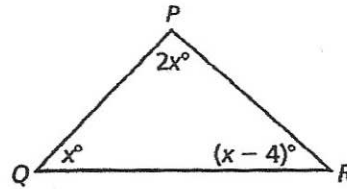


In Exercises 9 and 10, list the sides of the given triangle from shortest to longest.

9.



10.



In Exercises 11 and 12, is it possible to construct a triangle with the given side lengths? Justify your answer using a compound inequality.

11. 15, 37, 53

12. 9, 16, 8

In Exercises # 13 and 14, give the possible values, x , for the third side of triangle given the first two sides as shown below.

Use a compound inequality to justify your answers.

13. 5m and 12m

14. 18 ft. and 17 ft.

In Exercises # 15 and #16, find the midpoint of the segment with the given endpoints AND find the length of the segment.

15. J(-8, 0) K(1, 4)

16. C(-2, 2) D(0, -4)

Midpoint of \overline{JK}

Midpoint of \overline{CD}

Length of JK

Length of CD

17. Complete the two-column proof.

Given $\angle 1$ and $\angle 2$ are supplementary.

Prove $\angle 2 \cong \angle 3$

$\angle 1$ and $\angle 3$ are supplementary.

STATEMENTS	REASONS
$\angle 1$ and $\angle 2$ are supplementary.	
1. $\angle 1$ and $\angle 3$ are supplementary.	1. _____
$m\angle 1 + m\angle 2 = 180^\circ$	
2. $m\angle 1 + m\angle 3 = 180^\circ$	2. _____
3. _____	3. Transitive Property of Equality
4. $m\angle 2 = m\angle 3$	4. _____
5. _____	5. Definition of congruent angles