5-1 Midsegments of Triangles

Objective   To use properties of midsegments to solve problems

A **midsegment of a triangle** is a segment connecting the midpoints of two sides of the triangle.
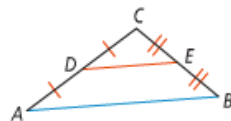
take note

| **Theorem 5-1** **Triangle Midsegment Theorem**		
Theorem If a segment joins the midpoints of two sides of a triangle, then the segment is parallel to the third side and is half as long.	**If . . .** D is the midpoint of $\overline{CA}$ and E is the midpoint of $\overline{CB}$	**Then . . .** $\overline{DE} \parallel \overline{AB}$ and $DE = \frac{1}{2}AB$

You will prove Theorem 5-1 in Lesson 6-9.

Got It?   **1. a.** In $\triangle XYZ$, A is the midpoint of $\overline{XY}$, B is the midpoint of $\overline{YZ}$, and C is the midpoint of $\overline{ZX}$. What are the three pairs of parallel segments?

© **b. Reasoning** What is $m\angle VUO$ in the figure at the right? Explain your reasoning.
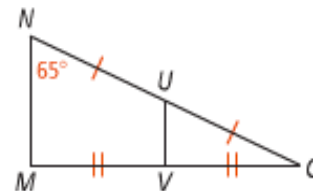
Got It? **2.** In the figure at the right, $AD = 6$ and $DE = 7.5$.
What are the lengths of $\overline{DC}$, $\overline{AC}$, $\overline{EF}$, and $\overline{AB}$?
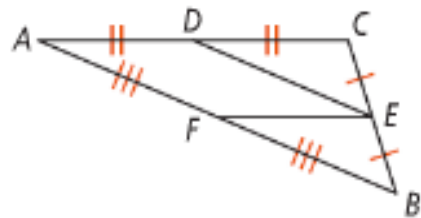
Got It? **3.** $\overline{CD}$ is a bridge being built over a lake, as shown in the figure at the right. What is the length of the bridge?

963 ft

Bridge

2640 ft

C

963 ft

D