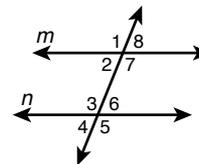


**LESSON**

**Practice B**

**3-3 Proving Lines Parallel**

Use the figure for Exercises 1–8. Tell whether lines  $m$  and  $n$  must be parallel from the given information. If they are, state your reasoning. (*Hint: The angle measures may change for each exercise, and the figure is for reference only.*)



1.  $\angle 7 \cong \angle 3$

2.  $m\angle 3 = (15x + 22)^\circ$ ,  $m\angle 1 = (19x - 10)^\circ$ ,  
 $x = 8$

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3.  $\angle 7 \cong \angle 6$

4.  $m\angle 2 = (5x + 3)^\circ$ ,  $m\angle 3 = (8x - 5)^\circ$ ,  
 $x = 14$

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5.  $m\angle 8 = (6x - 1)^\circ$ ,  $m\angle 4 = (5x + 3)^\circ$ ,  $x = 9$

6.  $\angle 5 \cong \angle 7$

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7.  $\angle 1 \cong \angle 5$

8.  $m\angle 6 = (x + 10)^\circ$ ,  $m\angle 2 = (x + 15)^\circ$

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9. Look at some of the printed letters in a textbook. The small horizontal and vertical segments attached to the ends of the letters are called *serifs*. Most of the letters in a textbook are in a serif typeface. The letters on this page do not have serifs, so these letters are in a sans-serif typeface. (*Sans* means “without” in French.) The figure shows a capital letter  $A$  with serifs. Use the given information to write a paragraph proof that the serif, segment  $\overline{HI}$ , is parallel to segment  $\overline{JK}$ .

**Given:**  $\angle 1$  and  $\angle 3$  are supplementary.

**Prove:**  $\overline{HI} \parallel \overline{JK}$

