

# 7-3

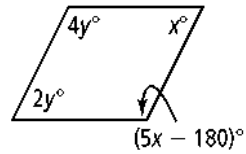
## Practice

Form G

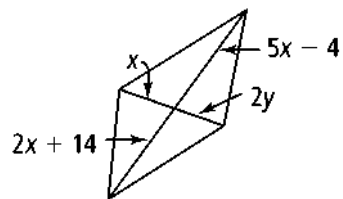
### Proving That a Quadrilateral Is a Parallelogram

**Algebra** For what values of  $x$  and  $y$  must each figure be a parallelogram?

1.



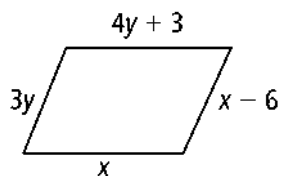
2.



3.



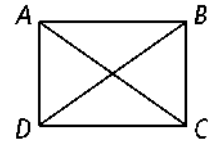
4.



**5. Developing Proof** Complete the two-column proof. Remember, a rectangle is a parallelogram with four right angles.

**Given:**  $ABCD$ , with  $\overline{AC} \cong \overline{BD}$

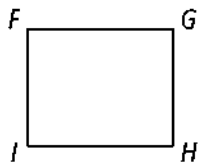
**Prove:**  $ABCD$  is a rectangle.



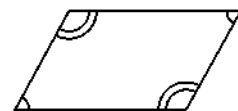
Statements	Reasons
1) $\square ABCD$ , with $\overline{AC} \cong \overline{BD}$	1) Given
2) <u>?</u>	2) Opposite sides of a $\square$ are congruent.
3) $\overline{DC} \cong \overline{ED}$	3) <u>?</u>
4) <u>?</u>	4) SSS
5) $\angle ADC$ and $\angle BCD$ are supplementary.	5) <u>?</u>
6) $\angle ADC \cong \angle BCD$	6) CPCTC
7) <u>?</u>	7) Congruent supplementary angles are right angles.
8) $\angle DAB$ and $\angle CBA$ are right angles.	

Can you prove that the quadrilateral is a parallelogram based on the given information? Explain.

6.  $\overline{FG} \parallel \overline{IH}$ ,  $\overline{FI} \parallel \overline{GH}$



7.



8.

