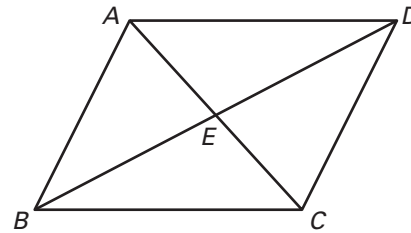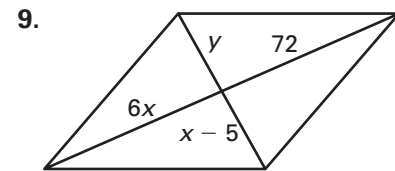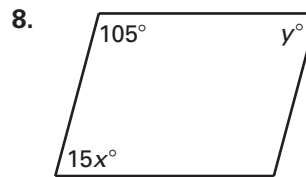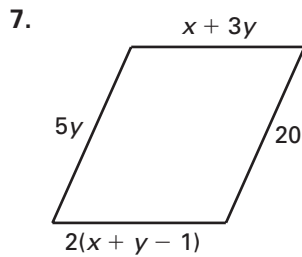NAME _____ DATE _____

Practice B
For use with pages 338–346

Decide whether each piece of given information alone is sufficient to prove that quadrilateral *ABCD* is a parallelogram.

1. *E* is the midpoint of $\overline{AC}$ and $\overline{BD}$.

2. $m\angle ABC + m\angle BCD = 180°$

3. $\overline{AB} \parallel \overline{DC}$ and $\overline{BC} \cong \overline{DA}$

4. $\angle ABC \cong \angle ADC$, and $\angle BAD \cong \angle BCD$

5. $\triangle ABE \cong \triangle DCE$

6. $\triangle ABE \cong \triangle CDE$

What value of *x* and *y* will make the polygon a parallelogram?

7.

$x + 3y$

$5y$

20

$2(x + y - 1)$

8.

$105°$ $y°$
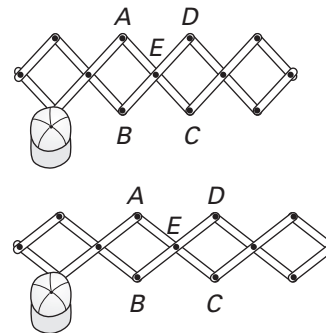
$15x°$

9.

y 72

$6x$

$x - 5$

Prove that the points represent the vertices of a parallelogram. Use a different method for each exercise.

10. $A(2, -1)$, $B(1, 3)$, $C(6, 5)$, and $D(7, 1)$

11. $A(-2, -4)$, $B(1, 2)$, $C(2, 10)$, and $D(-1, 4)$

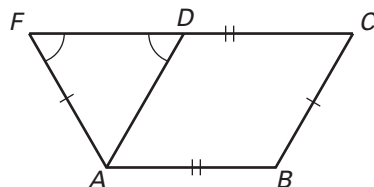**Use the diagram of the adjustable hat rack at the right to answer the following.**

12. Draw the quadrilateral *ABCD*.

13. If the hat rack were expanded outward, would *ABCD* still be a parallelogram? Explain.

Write a two-column or a paragraph proof.

14. **Given:** $\overline{AB} \cong \overline{CD}$, $\overline{BC} \cong \overline{AF}$

$\angle AFD \cong \angle ADF$

Prove: *ABCD* is a parallelogram.

15 **Given:** $\triangle RQP \cong \triangle ONP$

R is the midpoint of $\overline{MQ}$.

Prove: *MRON* is a parallelogram.