

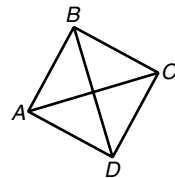
LESSON

Practice B

6-5 *Conditions for Special Parallelograms*

- On the National Mall in Washington, D.C., a reflecting pool lies between the Lincoln Memorial and the World War II Memorial. The pool has two 2300-foot-long sides and two 150-foot-long sides. Tell what additional information you need to know in order to determine whether the reflecting pool is a rectangle. (*Hint:* Remember that you have to show it is a parallelogram first.)

Use the figure for Exercises 2–5. Determine whether each conclusion is valid. If not, tell what additional information is needed to make it valid.



- Given:** \overline{AC} and \overline{BD} bisect each other. $\overline{AC} \cong \overline{BD}$
Conclusion: $ABCD$ is a square.

- Given:** $\overline{AC} \perp \overline{BD}$, $\overline{AB} \cong \overline{BC}$
Conclusion: $ABCD$ is a rhombus.

- Given:** $\overline{AB} \cong \overline{DC}$, $\overline{AD} \cong \overline{BC}$, $m\angle ADB = m\angle ABD = 45^\circ$
Conclusion: $ABCD$ is a square.

- Given:** $\overline{AB} \parallel \overline{DC}$, $\overline{AD} \cong \overline{BC}$, $\overline{AC} \cong \overline{BD}$
Conclusion: $ABCD$ is a rectangle.

Find the lengths and slopes of the diagonals to determine whether a parallelogram with the given vertices is a rectangle, rhombus, or square. Give all names that apply.

- $E(-2, -4)$, $F(0, -1)$, $G(-3, 1)$, $H(-5, -2)$ _____
 $EG =$ _____ $FH =$ _____
slope of $\overline{EG} =$ _____ slope of $\overline{FH} =$ _____
- $P(-1, 3)$, $Q(-2, 5)$, $R(0, 4)$, $S(1, 2)$ _____
 $PR =$ _____ $QS =$ _____
slope of $\overline{PR} =$ _____ slope of $\overline{QS} =$ _____