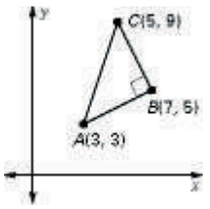
Answer Key

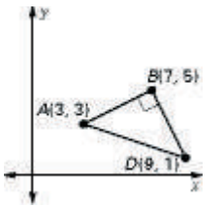
Lesson 4.1

Challenge Practice

1. (5, 9)



2. (9, 1)



3. 60°, 60°, 60° **4.** 63°, 36°, 81°; acute

5. $x = 29, y = 64$ **6.** $x = 12.9, y = 51.4$

7. $m\angle A = m\angle 1$

8. **GIVEN:** $\triangle ABC$

PROVE: Sum of exterior angles of $\triangle ABC$ is 360°.

By the definition of a straight angle, you know that $m\angle 1 + m\angle 2 = 180°$, $m\angle 3 + m\angle 4 = 180°$, and $m\angle 5 + m\angle 6 = 180°$. So, it follows that the sum of all six angles is $180° + 180° + 180° = 540°$. By the Triangle Sum Theorem, you know that $m\angle 2 + m\angle 4 + m\angle 6 = 180°$. The exterior angles of the triangle are $\angle 1$, $\angle 3$, and $\angle 5$. To find the sum of these three angles, subtract 180° from the sum of the interior angles, 540°, to obtain 360°.