

Name: \_\_\_\_\_

Date: \_\_\_\_\_



Use Area =  $\frac{1}{2} \cdot a \cdot b \cdot \sin C$ . Round to one decimal place.

1 In  $\triangle ABC$ ,  $a = 7$ ,  $b = 7$ ,  $\angle C = 80^\circ$ . Find the area: \_\_\_\_\_

2 In  $\triangle ABC$ ,  $a = 9$ ,  $b = 6$ ,  $\angle C = 70^\circ$ . Find the area: \_\_\_\_\_

3 In  $\triangle ABC$ ,  $a = 5$ ,  $b = 9$ ,  $\angle C = 45^\circ$ . Find the area: \_\_\_\_\_

4 In  $\triangle ABC$ ,  $a = 8$ ,  $b = 9$ ,  $\angle C = 65^\circ$ . Find the area: \_\_\_\_\_

5 In  $\triangle ABC$ ,  $a = 6$ ,  $b = 10$ ,  $\angle C = 55^\circ$ . Find the area: \_\_\_\_\_

6 In  $\triangle ABC$ ,  $a = 8$ ,  $b = 8$ ,  $\angle C = 50^\circ$ . Find the area: \_\_\_\_\_

7 In  $\triangle ABC$ ,  $a = 10$ ,  $b = 7$ ,  $\angle C = 60^\circ$ . Find the area: \_\_\_\_\_

8 In  $\triangle ABC$ ,  $a = 7$ ,  $b = 11$ ,  $\angle C = 40^\circ$ . Find the area: \_\_\_\_\_





## Laws of sines and cosines · Find a triangle's area from two sides and the included angle — Answer key

1. In  $\triangle ABC$ ,  $a = 7$ ,  $b = 7$ ,  $\angle C = 80^\circ$ . Find the area: 24.1

2. In  $\triangle ABC$ ,  $a = 9$ ,  $b = 6$ ,  $\angle C = 70^\circ$ . Find the area: 25.4

3. In  $\triangle ABC$ ,  $a = 5$ ,  $b = 9$ ,  $\angle C = 45^\circ$ . Find the area: 15.9

4. In  $\triangle ABC$ ,  $a = 8$ ,  $b = 9$ ,  $\angle C = 65^\circ$ . Find the area: 32.6

5. In  $\triangle ABC$ ,  $a = 6$ ,  $b = 10$ ,  $\angle C = 55^\circ$ . Find the area: 24.6

6. In  $\triangle ABC$ ,  $a = 8$ ,  $b = 8$ ,  $\angle C = 50^\circ$ . Find the area: 24.5

7. In  $\triangle ABC$ ,  $a = 10$ ,  $b = 7$ ,  $\angle C = 60^\circ$ . Find the area: 30.3

8. In  $\triangle ABC$ ,  $a = 7$ ,  $b = 11$ ,  $\angle C = 40^\circ$ . Find the area: 24.7