



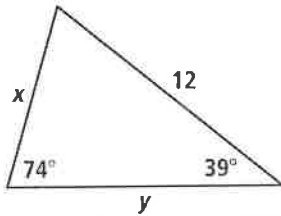
Name _____

8-3 Additional Practice

The Law of Sines

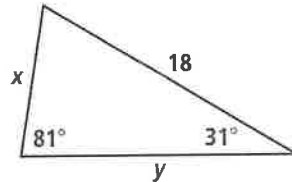
For Exercises 1–9, use the Law of Sines to find the values of x and y . Round to the nearest tenth.

1.



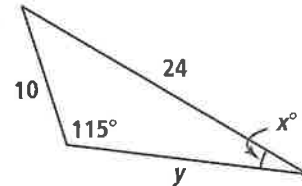
$$x \approx 7.9; y \approx 11.5$$

2.



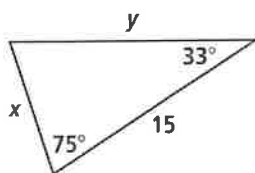
$$x \approx 9.4; y \approx 16.9$$

3.



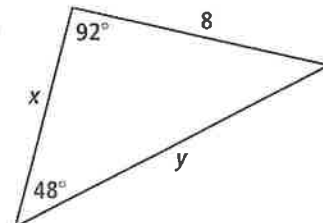
$$x^\circ \approx 22.2^\circ; y \approx 18.0$$

4.



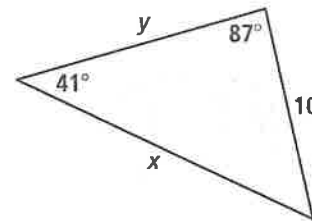
$$x \approx 8.6; y \approx 15.2$$

5.



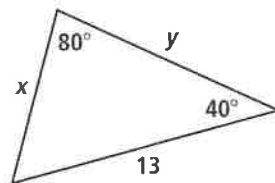
$$x \approx 6.9; y \approx 10.8$$

6.



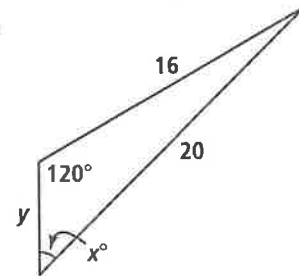
$$x \approx 15.2; y \approx 12.0$$

7.



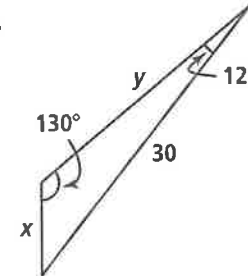
$$x \approx 8.5; y \approx 11.4$$

8.



$$x^\circ \approx 43.9^\circ; y \approx 6.4$$

9.



$$x \approx 8.1; y \approx 24.1$$

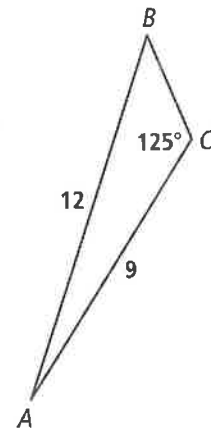
10. To find the measure of $\angle A$, Shannon made the calculations shown. What mistake did she make? What is the correct measure of $\angle A$?

She substituted incorrectly and found the measure of $\angle B$. The correct measure is 17.1° .

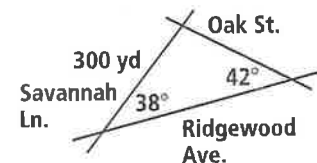
$$\frac{\sin A}{a} = \frac{\sin C}{c}$$

$$\frac{\sin A}{9} = \frac{\sin 125^\circ}{12}$$

$$m\angle A = \sin^{-1}\left(\frac{9 \sin 125^\circ}{12}\right) \approx 37.9^\circ$$



11. The diagram shows three streets that form the perimeter of a park. How far is it from the corner of Oak and Ridgewood to the corner of Oak and Savannah? Round to the nearest tenth of a yard. **276.0 yd**





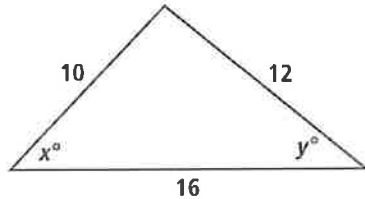
Name _____

8-4 Additional Practice

The Law of Cosines

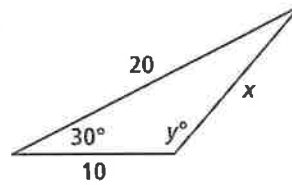
For Exercises 1–4, use the Law of Cosines to find the values of x and y . Round to the nearest tenth.

1.



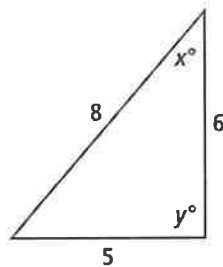
$$x \approx 48.5; y \approx 38.6$$

2.



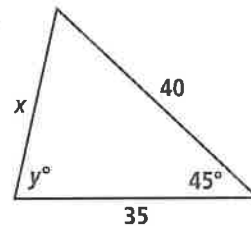
$$x \approx 12.4; y \approx 126.2$$

3.



$$x \approx 38.6; y \approx 92.9$$

4.



$$x \approx 29.1; y \approx 76.6$$

5. William calculated the measure of the largest angle for a triangle with sides 8, 11, and 13. What mistake did he make? What is the correct angle measure?

$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$8^2 = 13^2 + 11^2 - 2(13)(11) \cos C$$

$$64 = 169 + 121 - 286 \cos C$$

$$64 - (169 + 121) = -286 \cos C$$

$$\frac{226}{286} = \cos C$$

$$m\angle C \approx 37.8^\circ$$

He found the measure of the smallest angle. He needed to substitute 13 for c and 8 for a . The measure of the largest angle is 84.8° .

6. Two planes are flying at the same altitude. One airplane is 60 miles due north of the control tower. Another airplane is located 70 miles from the tower at a heading of 80° east of south. To the nearest tenth of a mile, how far apart are the two airplanes?

99.8 mi

