13.5 EXERCISES

HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 13, 31, and 45
- = **TAKS PRACTICE AND REASONING** Exs. 28, 41, 47, 48, 50, and 51
- = **MULTIPLE REPRESENTATIONS** Ex. 45

SKILL PRACTICE

EXAMPLES 1, 2, 3, and 4 on pp. 882–884 for Exs. 3–28

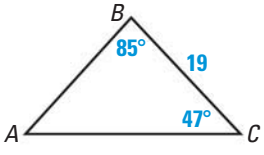
1. **VOCABULARY** What information do you need to use the law of sines?

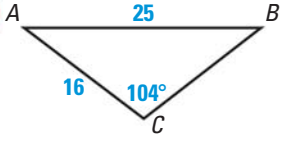
2. **WRITING** Suppose a, b, and A are given for $\triangle ABC$ where $A < 90°$. Under what conditions would you have no triangle? one triangle? two triangles?

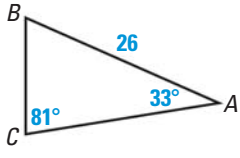
IDENTIFYING CASES **State the case (AAS, ASA, or SSA) applicable to the given measurements. Then decide whether the measurements determine *one triangle*, *two triangles*, or *no triangle*.**

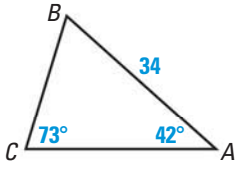
3. $A = 112°, a = 9, b = 4$
4. $A = 40°, C = 75°, c = 20$
5. $A = 52°, a = 32, b = 42$
6. $A = 37°, a = 8, b = 14$
7. $A = 28°, B = 64°, c = 55$
8. $A = 149°, a = 7, b = 10$
9. $B = 34°, b = 5, a = 16$
10. $B = 70°, b = 85, c = 88$
11. $C = 48°, c = 28, b = 20$

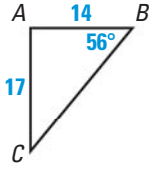
SOLVING TRIANGLES **Solve $\triangle ABC$.**

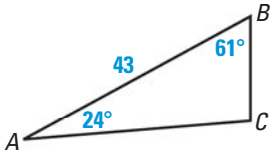
12.


13.


14.


15.


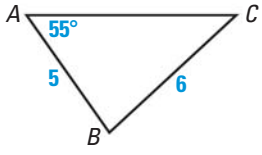
16.


17.


SOLVING TRIANGLES **Solve $\triangle ABC$. (*Hint:* Some of the "triangles" have no solution and some have two solutions.)**

18. $A = 73°, a = 18, b = 11$
19. $A = 26°, C = 35°, b = 13$
20. $B = 102°, C = 43°, b = 21$
21. $A = 38°, a = 19, b = 25$
22. $A = 55°, B = 64°, c = 34$
23. $A = 114°, a = 15, b = 10$
24. $C = 98°, c = 29, a = 33$
25. $A = 49°, B = 32°, b = 44$
26. $B = 21°, b = 17, c = 32$

27. **ERROR ANALYSIS** *Describe* and correct the error in finding the measure of angle C in the triangle below.



$$\frac{\sin C}{6} = \frac{\sin 55°}{5}$$

$$\sin C = \frac{6 \sin 55°}{5} \approx 0.9830$$

$$C \approx 79.4°$$

28. **TAKS REASONING** What is the side length c in $\triangle ABC$ if $A = 32°$, $C = 67°$, and $b = 31$ ft?

(A) 16.6 ft (B) 28.9 ft (C) 33.3 ft (D) 57.8 ft