

4-6 and 4-7 Review

Class Copy

Find the exact value of each expression, if it exists.

1. $\arcsin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

2. $\cos^{-1}\left(\cos \frac{\pi}{3}\right)$

3. $\tan\left(-\frac{3\pi}{2}\right)$

4. $\sin^{-1}\left(\cos \frac{\pi}{3}\right)$

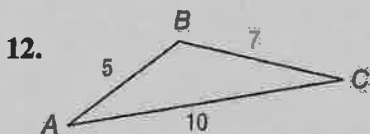
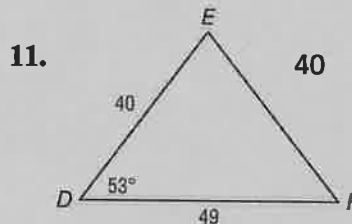
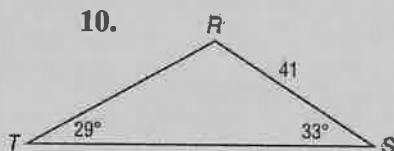
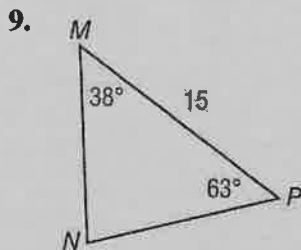
5. $\arctan\left(-\frac{\sqrt{3}}{3}\right)$

6. $\arcsin\left(-\frac{1}{2}\right)$

7. $\tan\left(\sin^{-1} 1 - \cos^{-1} \frac{1}{2}\right)$

8. $\sin\left(\arctan -\frac{\sqrt{3}}{3}\right)$

Solve each triangle. Round to the nearest tenth if necessary.



Find all solutions for the given triangle, if possible. Round to the nearest tenth if necessary.

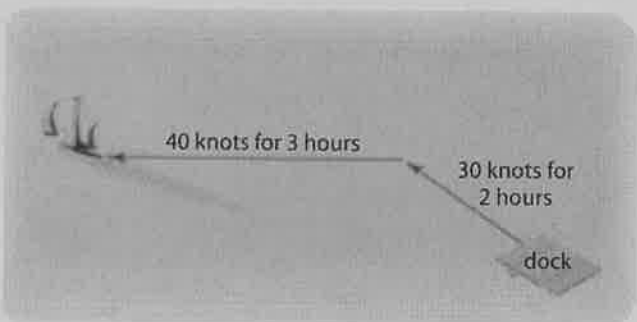
13. $a = 8, b = 16, A = 22^\circ$

14. $a = 9, b = 7, A = 84^\circ$

15. $a = 3, b = 5, c = 7$

16. A boat leaves a dock and travels 45° north of west averaging 30 knots for 2 hours. The boat then travels directly west averaging 40 knots for 3 hours.

- How many nautical miles is the boat from the dock after 5 hours?
- How many degrees south of east is the dock from the boat's present position?



Find the area of the triangle.

17. $a = 3, b = 5, c = 7$

$$s = \frac{3+5+7}{2}$$

$$s = 7.5$$

$$A = \sqrt{7.5(7.5-3)(7.5-5)(7.5-7)} \quad A = 312.183 \text{ in}^2$$

$$A = 6.495 \text{ in}^2$$

18. $a = 29, b = 27, c = 25$

$$s = 40.5$$

$$A = \sqrt{40.5(40.5-29)(40.5-27)(40.5-25)}$$

19. $a = 9, b = 16, c = 11$

$$s = 18$$

$$A = \sqrt{18(18-9)(18-16)(18-11)}$$

$$A = 47.624 \text{ in}^2$$