

13 Practice Test

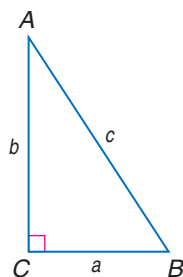
Solve $\triangle ABC$ by using the given measurements. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.

1. $a = 7, A = 49^\circ$

2. $B = 75^\circ, b = 6$

3. $A = 22^\circ, c = 8$

4. $a = 7, c = 16$



Rewrite each degree measure in radians and each radian measure in degrees.

5. 275°

6. $-\frac{\pi}{6}$

7. $\frac{11\pi}{2}$

8. 330°

9. -600°

10. $-\frac{7\pi}{4}$

Find the exact value of each expression. Write angle measures in degrees.

11. $\cos(-120^\circ)$

12. $\sin \frac{7\pi}{4}$

13. $\cot 300^\circ$

14. $\sec\left(-\frac{7\pi}{6}\right)$

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

16. $\arctan 1$

17. $\tan 135^\circ$

18. $\csc \frac{5\pi}{6}$

19. Determine the number of possible solutions for a triangle in which $A = 40^\circ$, $b = 10$, and $a = 14$. If a solution exists, solve the triangle. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.

20. Determine whether $\triangle ABC$, with $A = 22^\circ$, $a = 15$, and $b = 18$, has *no* solution, *one* solution, or *two* solutions. Then solve the triangle, if possible. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.

21. Suppose θ is an angle in standard position whose terminal side lies in Quadrant II. Find the exact values of the remaining five trigonometric functions for θ for $\cos \theta = -\frac{\sqrt{3}}{2}$.

22. **GEOLOGY** From the top of the cliff, a geologist spots a dry riverbed. The measurement of the angle of depression to the riverbed is 70° . The cliff is 50 meters high. How far is the riverbed from the base of the cliff?

23. **MULTIPLE CHOICE** Triangle ABC has a right angle at C , angle $B = 30^\circ$, and $BC = 6$. Find the area of triangle ABC .

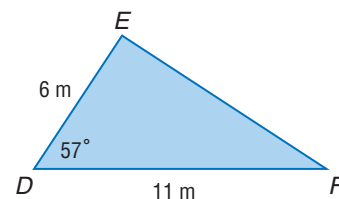
A 6 units^2

B $\sqrt{3} \text{ units}^2$

C $6\sqrt{3} \text{ units}^2$

D 12 units^2

24. Find the area of $\triangle DEF$ to the nearest tenth.



25. Determine whether $\triangle ABC$, with $b = 11$, $c = 14$, and $A = 78^\circ$, should be solved by beginning with the Law of Sines or Law of Cosines. Then solve the triangle. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.