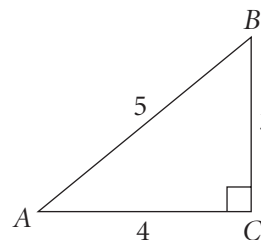


Practice 14-3

Right Triangles and Trigonometric Ratios

Use the triangle at the right to find the exact values of the trigonometric ratios.

- | | |
|-------------|-------------|
| 1. $\cos A$ | 2. $\cos B$ |
| 3. $\tan A$ | 4. $\tan B$ |
| 5. $\cot B$ | 6. $\sec A$ |
| 7. $\csc A$ | 8. $\sin B$ |



In $\triangle DEF$, $\angle D$ is a right angle. Find the remaining sides and angles.

Round answers to the nearest tenth.

- | | | | |
|----------------------|---------------------|---------------------|--------------------|
| 9. $f = 8, e = 15$ | 10. $f = 1, d = 2$ | 11. $f = 1, e = 2$ | 12. $f = 2, e = 1$ |
| 13. $f = 1, d = 500$ | 14. $d = 21, e = 8$ | 15. $e = 6, d = 12$ | 16. $e = 5, f = 1$ |
17. Suppose you are standing on one bank of a river. A tree on the other side of the river is known to be 150 ft tall. A line from the top of the tree to the ground at your feet makes an angle of 11° with the ground. How far from you is the base of the tree?
18. A kite string makes a 62° angle with the horizontal, and 300 ft of string is let out. The string is held 6 ft off the ground. How high is the kite?
19. You are designing several access ramps. What angle would each ramp make with the ground, to the nearest 0.1° ?
- | | | |
|-----------------------------|---------------------------|----------------------------|
| a. 20 ft long, rises 16 in. | b. 8 ft long, rises 8 in. | c. 12 ft long, rises 6 in. |
| d. 30 ft long, rises 32 in. | e. 4 ft long, rises 6 in. | f. 6 ft long, rises 14 in. |
20. In $\triangle ABC$, $\angle C$ is a right angle and $\tan A = \frac{2}{3}$. Draw a diagram and find each value in fraction form and in decimal form.
- | | | |
|-------------|-------------|-------------|
| a. $\cos A$ | b. $\tan B$ | c. $\sin A$ |
| d. $\cot B$ | e. $\sec A$ | f. $\csc B$ |

Find the measure of each angle to the nearest tenth of a degree.

- | | | | |
|--|----------------------|---------------------------|-------------------------|
| 21. $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)$ | 22. $\cos^{-1}(0.5)$ | 23. $\tan^{-1}(\sqrt{3})$ | 24. $\sin^{-1}(0.3232)$ |
| 25. $\cos^{-1}(0.8)$ | 26. $\tan^{-1}(1)$ | 27. $\cos^{-1}(0.4)$ | 28. $\tan^{-1}(3.2678)$ |
| 29. $\sin^{-1}(0.75)$ | 30. $\tan^{-1}(0.5)$ | 31. $\tan^{-1}(12.0001)$ | 32. $\sin^{-1}(0.1044)$ |

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