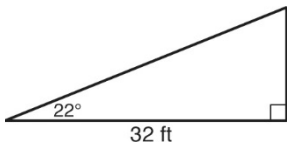
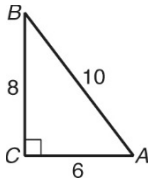
Right Triangles and Trigonometry Test

1. A skateboard ramp makes a 27´ angle with the ground. To the nearest foot, how high is the ramp?



2. What is Sin B, Cos B, and Tan B as a simplified fraction and decimal, rounded to the nearest 100th?

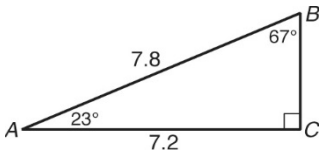


3. Using special right triangles, what is the Sin, Cos, and Tan of 45´?

4. Using special right triangles, what is the Sin, Cos, and Tan of 30´?

5. Using special right triangles, what is the Sin, Cos, and Tan of 60´?

6. Which expression CANNOT be used to find BC?



A $7.8(\sin 23^\circ)$

B $7.8(\cos 67^\circ)$

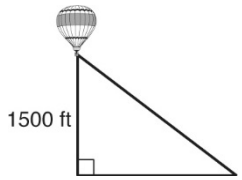
C $7.8(\tan 23^\circ)$

D $\dfrac{7.2}{\tan 67^\circ}$

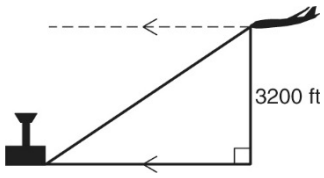
7. The length of a slide at a water park is 50 feet long, top to bottom. What is the approximate measure of the angle formed by the top of the slide if the beginning of the slide is 45 from the ground? Round to the nearest degree.

8. A forest ranger in a 140-foot-tall observation tower sees a fire moving in a direct path toward a lake. The angle of depression to the fire is 38´. To the nearest foot, how close is the fire to the observation tower?

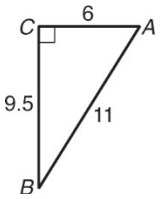
9. The angle of elevation from a person lying on the ground to a hot-air balloon is 32´. The balloon is at an altitude of 1200 feet. To the nearest foot, find the horizontal distance from the person to a point on the ground directly below the balloon.



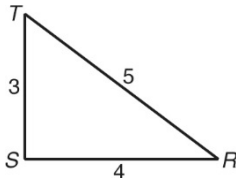
10. The angle of depression from a plane to the airport is 48´. The pilot reports that the plane's altitude is 6500 feet. Find the horizontal distance between the plane and the airport to the nearest foot.



11. What is the value of <B, to the nearest degree?



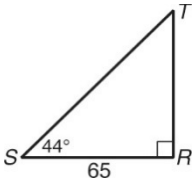
12. In the right triangle below, which is equal to the cosine of ĐR?



A 0.6 **C** 0.8

B 0.75 **D** 1.25

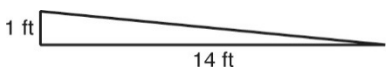
13. To the nearest whole number, what is TR?



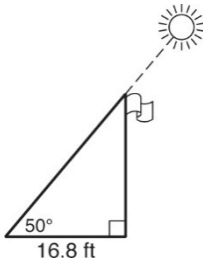
A 45 **C** 67

B 63 **D** 90

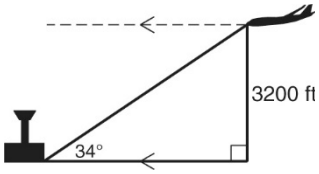
14. A wheelchair ramp has a rise from the ground of 1 foot. The ramp has a length of 14 feet) To the nearest degree, find the angle the ramp makes with the sidewalk. (The figure is not drawn to scale.)



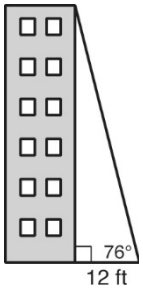
15. When the angle of elevation of the sun is 50´, a flagpole casts a shadow that is 16.8 feet long. What is the height of the flagpole to the nearest foot?



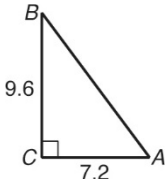
16. An air-traffic controller at an airport sights a plane at an angle of elevation of 348. The pilot reports that the plane's altitude is 3200 feet. To the nearest foot, what is the horizontal distance between the plane and the airport?



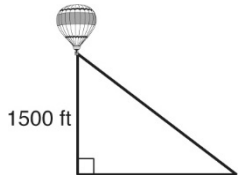
17. From a point on the ground 12 feet in front of the building, the angle of elevation to the top of the building is 76´. How tall is the building? Round the answer to the nearest foot.



18. To the nearest degree, what is mÐA?



19. The angle of elevation from a person lying on the ground to a hot-air balloon is 37´. The balloon is at an altitude of 1500 feet. To the nearest foot, find the horizontal distance from the person to a point on the ground directly below the balloon.



20. The angle of depression from a plane to the airport is 34´. The pilot reports that the plane's altitude is 3200 feet. Find the horizontal distance between the plane and the airport to the nearest foot.