| **Trigonometry Review**       <u>Show all work and all word problems must include a sketch for full credit.</u> |
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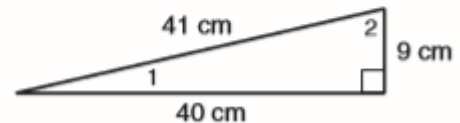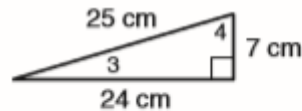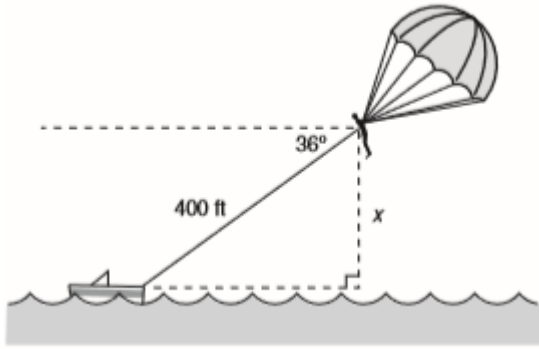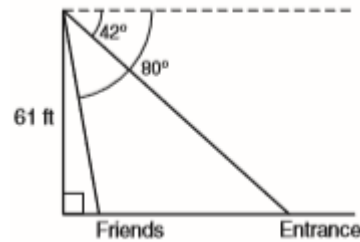| | |
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| 1. A road has a grade of 28.4%.  This means that the road rises 28.4 feet over a horizontal distance of 100 feet.  What angle does the hill make with a horizontal line?  Round to the nearest tenth. | 2.  Pet ramps for loading larger dogs into vehicles usually have slopes between 2/5 and 1/2.  What is the range of angle measure that most pet ramps make with a horizontal line?  Round to the nearest tenth. |
| 3.  The ladder represented by AB is 17 feet long.<br><br><br><br>A.  What is the measure of angle A, the angle that the ladder makes with the ground?  Round to the nearest degree.<br><br>B.  What is BC, the length of the slide?  Round to the nearest tenth. | 4.  If cos A = 0.28, which angle in the triangles below is ∠A?<br><br><br><br>   A.  ∠1<br>   B.  ∠2<br>   C.  ∠3<br>   D.  ∠4 |
| 5.  Janelle sets her treadmill grade to 6%.<br><br>A. What is the angle that the treadmill surface makes with a horizontal line?  Round to the nearest tenth.<br><br>B.  If the treadmill surface is 48 inches long, what is the area of the triangle formed by the treadmill, the ground, and the vertical distance? | 6.  A lifeguard is in an observation chair and spots a person who needs help.  The angle of depression to the person is 22°.  The eye level of the lifeguard is 10 feet above the pool surface.  What is the horizontal distance between the lifeguard and the person?  Round to the nearest foot. |
| 7.  At a topiary garden, Emily is 8 feet from a shrub that is shaped like a dolphin.  From where she is looking, the angle of elevation to the top of the shrub is 46°.  If she is 5 feet tall, which is the best estimate for the height of the shrub? | 8.  Find the angle of elevation to the top of a tree for an observer who is 31.4 meters from the tree if the observer's eye is 1.8 meters above the ground and the tree is 23.3 meters tall. Round to the nearest tenth. |

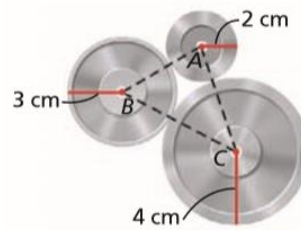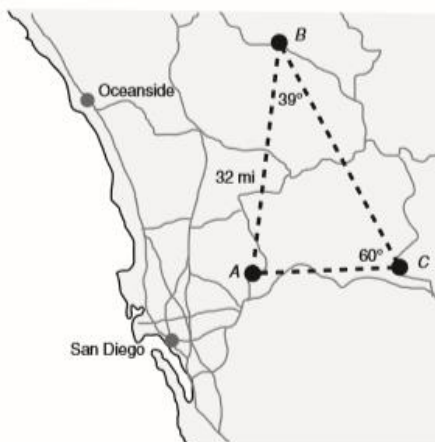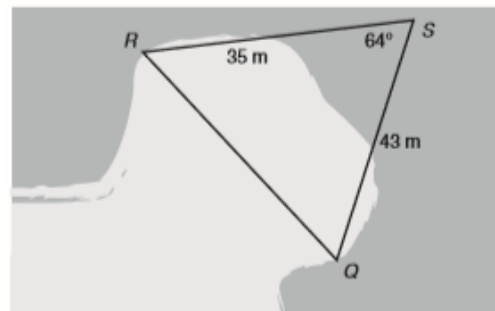| | |
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| 9. The figure shows a person parasailing. What is x, the height of the parasailer, to the nearest foot?<br><br><br>36°<br>400 ft<br>x | 10. Shane is 61 feet high on a ride at an amusement park. The angle of depression to the amusement park entrance is 42°, and the angle of depression to the his friends standing below is 80°. How far from the entrance are his friends standing? Round to the nearest foot.<br><br><br>42°<br>80°<br>61 ft<br>Friends    Entrance |
| 11. A plane is flying at a constant altitude of 14,000 feet and a constant speed of 500 miles per hour. The angle of depression from the plane to a lake in the distance is 6°. To the nearest minute, how long will it take before the plane is flying directly above the lake? | 12. Three circular disks are placed next to each other as shown. The disks have radii of 2 cm, 3 cm, and 4 cm. The centers of the disks form ΔABC. Find m$\angle$ABC to the nearest degree.<br><br><br>2 cm<br>A<br>3 cm — B<br>C<br>4 cm |
| 13. The map shows three earthquake centers for one week in California. How far apart were the earthquake centers at points A and C? Round to the nearest tenth.<br><br><br>B<br>Oceanside<br>39°<br>32 mi<br>60°  C<br>A<br>San Diego | 14. To find the distance across a bay, a surveyor locates points Q, R, and S as shown.<br><br><br>R<br>35 m<br>64°  S<br>43 m<br>Q<br><br>A. What is the distance QR to the nearest tenth?<br><br>B. What is m$\angle$Q to the nearest degree? |
| 15. Two angles of a triangle measure 56° and 77°. The side opposite the 56° angle is 29 cm long. What is the measure of the shortest side? Round to the nearest tenth. | 16. What is the perimeter of a triangle if two sides measure 7 inches and 10 inches, and the included angle between the two sides is 82°? Round to the nearest tenth. |