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Mr. Doherty

Chapter 13 Practice Test

1. Find three coterminal angles (in radians) including one positive and one negative for $\frac{-2\pi}{7}$

2. Find three coterminal angles (in degrees) including one positive and one negative for $224°$

3. Evaluate the 6 trig functions at the angle $\frac{\pi}{6}$.

4. Convert following angles from degrees to radians.

   a) $82°$ b) $-470°$

5. Convert following angles from radians to degrees (to nearest whole degree).

   a) $\frac{5\pi}{11}$ b) $-\frac{2\pi}{7}$

6. An amusement park ride has swings connected by metal chains. The metal chains are connected to a metal pole in the middle that spins in circles. The pole spins so fast that the chains get stretched out to their maximum length and the riders are swung very quickly around the outside. The metal chains are 20 feet long and each time the ride goes the pole spins in 30 complete circles.

   a) What is the angle that the swings travel in degrees and radians?

   b) How far does someone riding this particular ride travel through the air?

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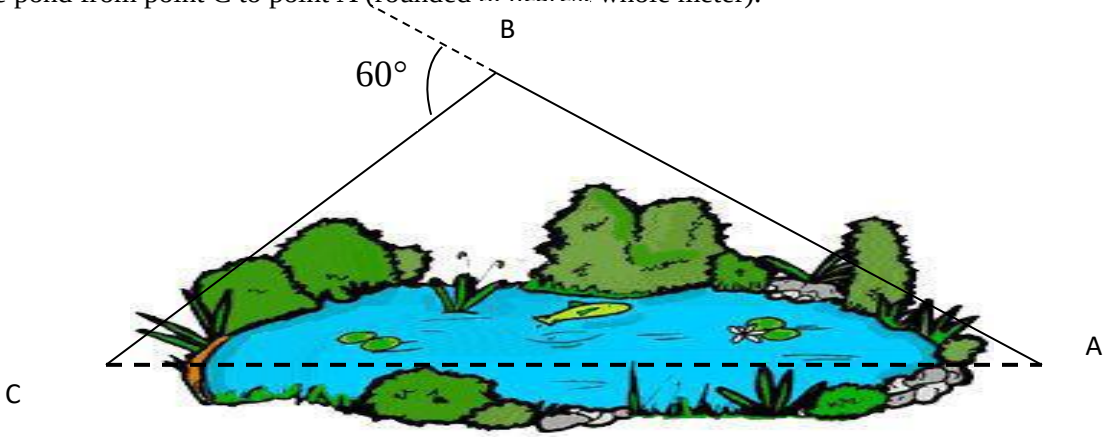
7. The point (-5,-6) is on the terminal side of an angle in standard position. Use this fact to evaluate the six trigonometry functions. (Find the exact value, no decimal answers)

8. Solve for the following angles in terms of degrees (rounded to the nearest angle).

a) $\cos\theta = .25$

b) $\cot\theta = .4$

9. To approximate the length across a pond a surveyor walks from point A to point B. He then turns 60 degrees (look at picture) and walks towards point C. The surveyor was walking at a constant speed of 75 meters per minute, and it took him 6 minutes to walk to walk from point A to point B, and 4 minutes to walk from point B to point C. Use this information to approximate the distance across the pond from point C to point A (rounded to nearest whole meter).



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10. For each problem below solve for the remaining sides and angles.. If no solution exists, be sure and state how you know. Round all answers to the tenths place.

a) $< A = 121°, b = 28, a = 42$

b) $< B = 76°, a = 20, b = 18$

c) $A = 25°, B = 35°, c = 21$

d) $B = 135°, a = 19, c = 7$

11. A kid was visiting the Eiffel Tower in Paris. On the trip, he wondered if he could see his mom at the top. The Eiffel Tower is 325 meters tall. The kid on the ground is standing at ground level 55 meters away. He is point his camera at the top of the tower. At what angle should he point his camera?

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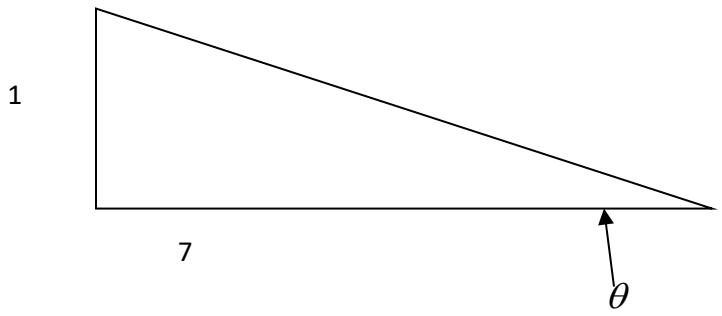
12) Evaluate the following trig functions without a calculator. Give exact answers with not decimal answers.

a) $\sin(30°)$ b) $\sec(30°)$

c) $\tan(-45°)$ d) $\cos(240°)$

14) Evaluate the six trig functions based on the drawing below. (It is a right triangle)




15) Find the area of the triangle with the given side lengths and angles.

$B = 124°, a = 9, c = 11$