DATE: _____

Unit 5 (Chapter 4): Trigonometric Functions **Pre-Calculus**

4.3 Circular Functions

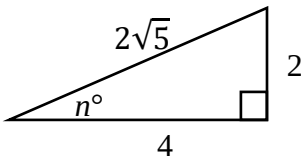
Target 5A: Evaluate trigonometric functions and expressions

Target 5B: Use reference angles to evaluate trigonometric ratios given specific constrains

Review of Prior Concepts

In the following triangle, what is the value of $\sec n$?

(A) $\sqrt{5}$ **(B)** $2\sqrt{5}$ **(C)** $\frac{\sqrt{5}}{2}$ **(D)** $\frac{\sqrt{5}}{5}$ **(E)** $\frac{2\sqrt{5}}{5}$



More Practice

Trigonometric Ratios

http://www.themathpage.com/atrig/solve-right-triangles.htm

http://www.mathguide.com/lessons/RightTriTrig.html

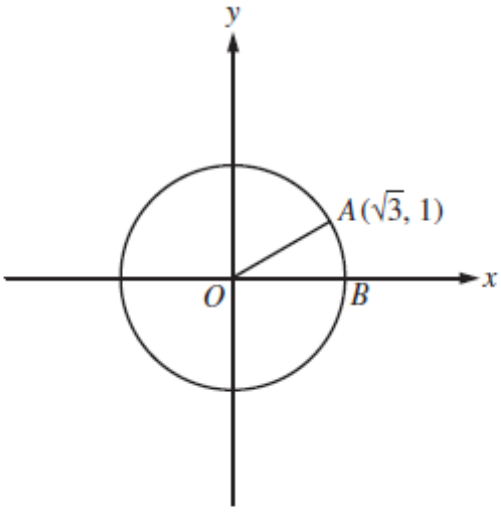
https://www.youtube.com/watch?v=l5VbdqRjTXc

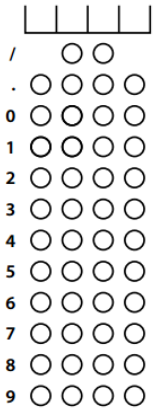
SAT Connection

Passport to Advanced Math

14. Use structure to isolate or identify a quantity of interest in an expression

Example:



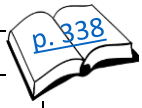


NOTE: You may start your answers in any column, space permitting. Columns you don't need to use should be left blank.

In the xy-plane above, O is the center of the circle, and the measure of $\angle AOB$ is $\frac{\pi}{a}$ radians. What is the value of a?

Solution

Vocabulary



Key Idea	Definition (in your own words)	Sketch/Drawing/Diagram
Initial Side		
Vertex		
Terminal Side		
Positive Angles		
Negative Angles		
Standard Position		
Coterminal Angles		

Examples

Sketch the angle θ whose terminal side in standard position passes through the given point, and find the six trigonometric functions for θ. Then, find the measure of the reference angle α and the angle θ for each example.

1. $(9,12)$

2. $(-4,3)$

Find the angle that passes through the given point. Give your answer in radians and degrees. Then, find two more angles that are co-terminal with your solution angle for each example.

3. $(1, \sqrt{3})$ **4.** $(-3,3)$

More Practice

Exact Value of Angles

http://www.purplemath.com/modules/quadangs2.htm
https://www.youtube.com/watch?v=BZwIbvrcbEQ
https://www.youtube.com/watch?v=kpcT8lMAOV4

Homework Assignment

p.347 #1,3,7,10,13,17,19,25,27,29

SAT Connection

Solution

The correct answer is 6. By the distance formula, the length of radius OA is $\sqrt{(\sqrt{3})^2 + 1^2} = \sqrt{3+1} = 2$. Thus, $\sin(\angle AOB) = \frac{1}{2}$. Therefore, the measure of $\angle AOB$ is 30°, which is equal to $30\left(\frac{\pi}{180}\right) = \frac{\pi}{6}$ radians. Hence, the value of a is 6.