Question

Assume sin t = 0.45 and sin w = 0.89, both t and w are positive values between 0 and 2π, and both t and w determine a terminal point in quadrant 1. Which statements best describes the relationship between t and w?

A: w > t

B: t > w

C: It is not possible to tell from the given information.

Solution

Given both t and w determine a terminal point in quadrant 1, if sin w>sin t then w>t.

Answer: A. w > t.

Question

If sinθ = 4/5 and θ is in quadrant 2, the value of cot θ is _____. If necessary, use the slash mark (/) for a fraction bar.

Solution

If θ belongs to quadrant 2 then cos θ<0. By the Pythagorean identity, $cos^2\theta + sin^2\theta = 1$. It follows from both previous statements that $cos\theta = -\sqrt{1 - sin^2\theta}$.

Next,

cot θ = cos θ / sin θ = - $\sqrt{1 - sin^2\theta}$ / sin θ = - $\sqrt{1 - 0.64}$ / 0.8 = -0.6/0.8 = -0.75.

Answer: -0.75.