

Math 1613 - Trigonometry

Quiz #12 - 2009.11.05

Solutions

Write the expression $\cos(\tan^{-1}(x))$ as an algebraic (nontrigonometric) expression in x , with $x \geq 0$.

Setting $\theta = \tan^{-1}(x)$, we have that $\tan(\theta) = x$. Therefore corresponding to angle θ , set the opposite side to x , adjacent to 1, which makes $\tan(\theta) = x$ as desired with hypotenuse $\sqrt{1+x^2}$.

$$\cos(\tan^{-1}(x)) = \cos(\theta) = \frac{1}{\sqrt{1+x^2}}$$