

Derivatives of Inverse Trig Functions Practice

1. Evaluate $\lim_{h \rightarrow 0} \frac{\arccos(\frac{1}{2}+h) - \arccos(\frac{1}{2})}{h}$.

2. The position of a particle moving in the xy -plane is given by the parametric equations $x(t) = \sin^{-1}(4t^3 - 3t^2)$ and $y(t) = \tan^{-1}(t\sqrt{t-1})$. For what value of t is the particle at rest?

3. Determine where $f(x) = 2x + 10 \operatorname{arccot} x$ has a horizontal tangent line.

4. Find $\frac{dy}{dx}$ for $\tan^{-1}(x^2y) = x + 3xy^2$