

National Institute of Open Schooling (NIOS)
Senior Secondary Course
Lesson – 27: Differentiation of Trigonometric Functions
Worksheet -27

1. Find the derivative of $\sin x^2$ from first principle.
2. Find the derivative of the trigonometric function $\cot \sqrt{x}$ by using chain rule.
3. If $y = \sqrt{\frac{1 - \cos x}{1 + \cos x}}$, then find $\frac{dy}{dx}$
4. Find derivative function $y = f(x)$, where $y = \sin 2x + (3x + 5)^2$
5. Find derivative of $f(x) = x \tan x$
6. Evaluate inverse of trigonometric function $f(x) = \sin^{-1}(x^2)$ from first principle.
7. If $y = \sin^{-1} x^2$, find $\frac{dy}{dx}$
8. Find the second order derivative of trigonometric function $x \sin x$
9. If $y = \sqrt{x + \sqrt{x + \sqrt{x + \dots}}}$, then find $\frac{dy}{dx}$

10. If 't' is a function of x, then $\frac{d}{dx}(\sin^{-1} t) = \frac{1}{\sqrt{1-t^2}}$