

Derivatives of Trigonometric Functions

Find dy/dx .

1. $y = 4 \cos x$

2. $y = x \sin x$

3. $y = \sin x \cos x$

4. $y = \cot x \csc x$

5. $y = \sin x \sec x$

6. $y = \cos x(x - \cot x)$

7. $y = \sec x \tan x$

8. $y = \csc^2 x \cot x$

9. $y = \frac{x}{2 + \sin x}$

10. $y = \frac{\tan x}{1 + \sin x}$

11. $y = \frac{x^2 + 4 \cot x}{x + \tan x}$

12. $y = x \csc x - \frac{x}{\cot x}$

13. Find an equation for the line tangent to the graph of $y = \tan x$ at the point $\left(\frac{\pi}{4}, 1\right)$.

14. Find an equation for the line tangent to the graph of $y = x \sin x$ at the point $(\pi, 1)$.