Calculus I
Section 3.4 – Derivatives of Trigonometric Functions

Find the derivative of each of the following.

1. $y = 1 + x - \cos x$

2. $y = 2\sin x - \tan x$

3. $y = \dfrac{1}{x} + 5\sin x$

4. $y = x\sec x$

5. $y = 4 - x^2 \sin x$

6. $y = 3x + x\tan x$

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7. $y = \dfrac{4}{\cos x}$

8. $y = \dfrac{\cos x}{1 + \cos x}$

9. $y = \dfrac{\cot x}{1 + \cot x}$

10. $y = \dfrac{\cos x}{1 + \sin x}$

Find an equation of the line tangent to the graph at the given point.

11. $y = \dfrac{\tan x}{x}$; $x = \dfrac{\pi}{4}$

12. $y = 1 + \sqrt{2}\csc x + \cot x$; $x = \dfrac{\pi}{4}$