

Solve:

1) What is $\frac{d}{dx} \operatorname{arccot}(4x - 2)$?

2) What is the derivative of $t(x) = \sec^{-1}(-2x + 2)$?

3) Given $q(x) = \cos^{-1}(-5x - 2)$. What is $q'(x)$?

4) Given $g(x) = \cos^{-1}(x)$.
What is $\frac{dg}{dx}$?

5) What is the derivative of $w(x) = \arctan(-3x^2 - 4)$?

6) $\int \frac{1}{x^2 + 1} dx =$

7) $\int \frac{1}{|x|\sqrt{x^2 - 1}} dx =$