

1. What is the meaning of the expression $\lim_{\Delta x \rightarrow 0} \frac{\cos(x + \Delta x) - \cos x}{\Delta x}$?

2. If $g(x) = \sqrt{x}$, evaluate $g'(3)$.

3. What is the line tangent to $f(x) = 3x^2 + 8$ at $x = -2$?

4. Find the derivative of $y = x^3 - 2x$.

5. What is the meaning of the expression $\lim_{t \rightarrow 3} \frac{4^t - 64}{t - 3}$?

6. Find the slope of the curve $y = \tan x$ at the origin.

7. If $h(y) = \frac{2}{y}$, compute $h'(y)$.