

PRACTICE QUIZ 12

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Time: 12 min

Time to beat: ? min

Problem 1. Find the derivative of $f(x) = 4x^8 - \frac{5}{x^3} + 2x^{18}$.

Problem 2. If $h(x) = 2f(x) - 4g(x)$ and $f(1) = 2$, $g(1) = 4$, $f'(1) = -1$, $g'(1) = 4$, then what is $h'(1)$?

Problem 3. Find the derivative for $f(x) = \frac{x^2-6x-3}{\sqrt[5]{x^3}}$.

Problem 4. Using the fact that $\lim_{x \rightarrow 0} \frac{1-\cos(x)}{x^2} = 1/2$, find the limit $\lim_{x \rightarrow 0} \frac{1-\cos(2x)}{\sin 5x^2}$

Problem 5. Find the equation of the tangent line to the curve $y = 2 \tan x$ at $x = \frac{\pi}{4}$.