

Practice Quiz No. 6

Show all of your work, label your answers clearly, and do not use a calculator.

Problem 1 Given the function $f(x) = 2x^3 + 3x^2 + 5$

a Find all critical points of $f(x)$.

b Find the minimum and maximum of $f(x)$ on the interval $[-2, 1]$

Problem 2 Given the function $f(x) = x^2|x - 2|$

a Find all critical points of $f(x)$.

b Find the minimum and maximum of $f(x)$ on the interval $[1, 3]$

Problem 3 Given the function $f(x) = \sqrt{1+x^2}$

a Find all critical points of $f(x)$.

b Find the minimum and maximum of $f(x)$ on the interval $[-1, 1]$

Problem 4 Given the function $f(x) = x^{2/3} - 2x^2$

a Find all critical points of $f(x)$.

b Find the minimum and maximum of $f(x)$ on the interval $[-1, 1]$