

Your Name:

Duration of the Quiz is 20 minutes. There are four problems, worth 20 points. Show all your work for full credit. Books, notes etc. are prohibited. Calculators are NOT permitted.

1. Compute $\frac{d}{dx} \int_{x^2+1}^{x^3} \sqrt{t^2+1} dt$.

2. Let $g(x) = \int_1^x t^2 - 7t + 12 dt$.

Find the critical points of $g(x)$. Also, find the local maximum and minimum values of $g(x)$.

3. Evaluate the integral

$$\int_0^3 t^2 - 2t + 12 \, dt$$

4. Evaluate the integral

$$\int_{\pi/6}^{\pi/2} \cos x \, dx$$