

Math 106 Honors (Quiz 6)

Name _____.

Make sure you show all your work!

1. (12 points) (no calculator)

(a) Find the average value of $f(x) = x\sqrt{x}$ on $[0, 4]$.(b) Evaluate $\int \frac{x^3+4}{x} dx$.(c) Evaluate $\int_0^{\frac{\pi}{4}} \sec^2 x \, dx$.(d) Given $g(x) = \int_1^{x^3} (e^{t^2} + \sin(t)) \, dt$, find $g'(x)$.2. (8 points) Use the definition of the integral to evaluate $\int_0^2 (x^2 + 2x) \, dx$ (no credit for any other method).