

Math 182 Honors Quiz 5 Version A

1. Solve the following definite and indefinite integrals:

(i) $\int \ln \sqrt{x} \, dx$

(ii) $\int_0^3 x\sqrt{x+1} \, dx$

(iii) $\int \frac{1}{x^2+4} \, dx$

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2. State 4 terms of the Taylor's series for $f(x) = (x + 1) \sin x$ expanded about $a = 0$.

3. Use Taylor's series to compute $\lim_{x \rightarrow 0} \frac{2xe^x + \ln(1 - 2x)}{x^3}$.