

Honors Math 182 Quiz 10 Version A

1. Use Taylor's theorem or L'Hôpital's rule to find the following limits:

(i) $\lim_{x \rightarrow 0} \frac{(x-1)e^x + \cos x}{x^3}$

(ii) $\lim_{x \rightarrow 0} \frac{\ln(\cos x)}{x^2}$

(iii) $\lim_{x \rightarrow 0} \frac{x^3}{e^{x^2} \sin x - \arctan(x)}$

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2. Find the following antiderivatives:

(i) $\int \sqrt[3]{\xi}(\xi^{\sqrt{2}} - \sqrt{\xi}) d\xi$

(ii) $\int w^2 e^{-2w} dx$

(iii) $\int \frac{s}{(s+1)^2(s-2)} ds$