

Math 182 Extra Credit 2 Version B

1. Use Taylor's Series to compute the following limits:

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

(ii)  $\lim_{x \rightarrow 0} \frac{x - xe^x}{1 - \cos x}$

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1. *continued ...*

$$\text{(iii)} \quad \lim_{x \rightarrow 0} \frac{(x - \arctan x) \ln(1 - x^2)}{x^5}$$

$$\text{(iv)} \quad \lim_{x \rightarrow 0} \frac{x^2 + x \ln(1 + x)}{\cos(4x) - 1}$$