WRITE YOUR NAME AND CODE ON THE BACK. *Show your work!*

1. { 12 points } **The limit of an indeterminate form as $x \to 0$ can sometimes be found by expanding the functions involved in Maclaurin series and taking the limit of the series term by term. Use this method to find the limits.**

(a) $\lim_{x \to 0} \dfrac{1 - \cos x}{x^2}$

(b) $\lim_{x \to 0} \dfrac{\ln \sqrt{1 - x}}{\sin(3x)}$