

(1) [5] Evaluate $\lim_{x \rightarrow 0^+} \frac{x^2}{x - \sin(x)}$.

(2) [5] Determine $f(x)$ if

$$f''(x) = 3x + \cos(x), \quad f(0) = 0, \quad f'(0) = 2$$

(3) [5] Evaluate $\lim_{x \rightarrow 0^+} (\sin(2x))^x$.