

淡江大學 101 學年度碩士班招生考試試題

系別：國際企業學系
產業經濟學系

科目：微 積 分

考試日期：2月26日(星期日) 第3節

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There are 5 questions in the test. 20 points for each question.

1. Solve for the following $\lim_{x \rightarrow 0} (1-x)^{\frac{1}{x}} = ?$

2. Assume $y = \sqrt{\frac{(x-1)(x+3)}{(x+1)^3}}$, then please solve for $\frac{dy}{dx} = ?$

3. Assume $f(x) = 2x^3 + 3x^2 - 12x - 7$, please find the maximal and minimal values at the range of $x \in [-3, 0]$.

4. Solve for the following $\lim_{x \rightarrow 0} (e^x - e^{-x}) \ln x = ?$

5. Solve for the following $\int \frac{1}{\sqrt{x}(\sqrt{x}-2)^3} dx = ?$