

微積分 A 預習測驗 #12

不定型與分部積分 11/25/2013(一)

姓名：_____ 系級：_____ 學號：_____ 分數：

Read Section 7.7 (pp. 493-500), Section 8.1 (pp. 511-515) and answer the following questions.

1. State L'Hospital Rule appeared in page 494 and use it to find the limits:

$$\lim_{x \rightarrow \infty} \frac{\ln x}{\sqrt[3]{x}}, \quad \lim_{x \rightarrow 0} \frac{\tan x - x}{x^3}, \quad \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n.$$

2. Write down the formula for integration by parts and use it to find the indefinite integrals:

$$\int x e^x dx, \quad \int x \ln x dx, \quad \int \arctan x dx.$$