You have 20 minutes to do this quiz. You may not use any books or notes while you do the quiz nor discuss the quiz with anyone. You may not use your calculator. Show your work clearly.

1. a. Write out the integration by parts formula

b. Evaluate using integration by parts: \( \int x \cos(x) \, dx \).

2. Evaluate \( \lim_{x \to \infty} \frac{\ln x}{e^x} \).

3. Evaluate \( \lim_{x \to \infty} \frac{\ln x}{x^2} \).

Self evaluation: (Circle) Rate your level of understanding of the material on the quiz:

Mastery  Tentative  Unsure