

Calculus 1B Quiz 1

Name:

GSI: Paul Baginski

Student ID:

1. Integrate: $\int t^2 \ln(t) dt$

2. Integrate: $\int x^2 \sin(x) dx$

(turn over)

3a. Rederive the formula for integration by parts from a well-known formula from Calc 1A.

3b. Integration by parts lets you integrate $\int f g' dx$ by integrating $\int g f' dx$ instead. Write the formula that integration by parts gives you for $\int f g' dx$. Then write the formula integration by parts gives you for $\int g f' dx$.

3c. What happens when you plug the second formula from 3b into the first formula from 3b?

3d. Sometimes to solve an integral, you have to do integration by parts two times. What does 3c. tell you about how to choose your “parts” (f and g') the second time, relative to how you chose the “parts” the first time?