Definite Integrals Study Group Activity
(Groups of 3 or 4 people)

**Purpose of activity:** Gain a deeper understanding of the topic by solving a problem on your own and then teaching it to your peers.

**Due Date:** End of Thanksgiving Break (25th at midnight)

**Individual Portion:** Everybody in the group should choose ONE of the problems below. Solve your problem on your own before you meet with your group.

1. Find \( \int_{1}^{4} x^2 (x^3 + 1)^2 \, dx \)
2. Find \( \int_{\frac{3\pi}{2}}^{\pi} x \cos(x^2) \, dx \)
3. Find \( \int_{0}^{\sqrt{\ln(3)}} xe^{x^2} \, dx \)
4. Find \( \int_{1}^{e^2} \frac{3x^2 + 2}{x^3 + 2x} \, dx \)

**Group Portion:** Take turns teaching your problem to the rest of the group. Use a whiteboard to clearly show each step to your groupmates. Record your teaching using a phone or camera.

**Assessment:** Upload your video to Blackboard.