

The Integral of $\frac{1}{x}$ and Friends

Complete this assignment and submit it to Gradescope by 4:00pm on your class day. You can print this sheet, or write on your own paper. Contact us if internet connections or other issues require alternate arrangements.

1. Evaluate $\int_1^\infty \frac{1}{x^p} dx$ where $p > 0$ is a constant.

2. For which values of $p > 0$ does $\int_1^\infty \frac{1}{x^p} dx$ converge? For which values of $p > 0$ does it diverge?

3. Which textbook sections will be on the exam? (Note: you can answer this question by looking at the materials on Canvas and in the lecture videos.)

One-Minute Questions: Write a sentence for each.

A. What's one mathematical question you have after watching the videos?

B. What's one interesting thing you learned from the book or videos?