

Answers to Week 8 Week in Review

Section 11.2

1.
 - (a) $\frac{1}{10}$
 - (b) $\frac{3}{2}$
 - (c) $4 + \ln(2)$

Section 11.3

1. Convergent
2. $\int_1^{\infty} \frac{\ln(x)}{x^3} dx = \frac{1}{4}$; Error $\leq \frac{2 \ln(10) + 1}{400} \approx .014$
3. $\sqrt[5]{2} \times 10^9 \approx 73$ terms

Exam III Review

1.
 - (a) $\frac{1}{6} \left(\frac{\pi}{4} + \frac{1}{2} \right)$
 - (b) $\ln|x| + 2 \tan^{-1}(x) + C$
 - (c) $\sqrt{x^2 - 4} + 2 \sec^{-1} \left(\frac{x}{2} \right) + C$
 - (d) Integral diverges
2.
 - (a) $\frac{1}{5e^5}$
 - (b) Converges by comparison with $\int_0^{\infty} e^{-5x} dx$.
3.
 - (a) Converges to $\frac{\sqrt{3}}{2}$
 - (b) Diverges by oscillation