

Calculus II Practice Final

A balanced twenty-five-question Calculus II final with study map and complete worked key.

Revision: 2026-07-23 **Canonical page:** <https://bettergrades.net/subjects/math/calculus/practice-exams/calculus-2-final/>

Name: _____ **Date:** _____

1. Evaluate $\int x e^x dx$.

2. Evaluate $\int \sin^3 x \cos x dx$.

3. Evaluate $\int 1/(x^2 - 1) dx$.

4. Determine convergence of $\int_1^\infty x^{-2} dx$.

5. Find area between $y=x$ and $y=x$ squared on $[0,1]$.

6. Rotate $y=x$ on $[0,2]$ about x-axis. Find volume.

7. A force $F(x)=4x$ acts from $x=0$ to 3. Find work.
8. Find $\lim_{n \rightarrow \infty} n/(n+1)$.
9. Sum $\sum_{n=0}^{\infty} 3(1/2)^n$.
10. Test $\sum_{n=1}^{\infty} n/(n+1)$ for convergence.
11. Test $\sum_{n=1}^{\infty} 1/n^{3/2}$.
12. Test $\sum_{n=1}^{\infty} 1/(n^2+4)$.
13. Test $\sum_{n=1}^{\infty} (3n+1)/(n^2+2)$.

14. Test $\sum_{n=1}^{\infty} n!/4^n$.

15. Test $\sum_{n=1}^{\infty} (2n/(3n+1))^n$.

16. Test $\sum_{n=1}^{\infty} (-1)^{n-1}/n$.

17. Classify $\sum_{n=1}^{\infty} (-1)^n/n^2$.

18. Find R for $\sum_{n=0}^{\infty} x^n/5^n$.

19. Find the interval for $\sum_{n=1}^{\infty} (x-1)^n/n$.

20. Write the Maclaurin series for $\cos x$.

21. Find T_3 for e to the power x at 0.
22. Bound alternating-series error after four terms of $\sum_{n=1}^{\infty} (-1)^{n-1}/n$.
23. For $x=t$ squared, $y=t$ cubed find dy/dx .
24. Convert $r=2\cos$ to Cartesian form.
25. Why must power-series endpoints be tested separately?