

- Test 3
 - opens today at 3pm
 - closes Saturday at 3pm

- TODAY: More integration methods
- MONDAY: Volumes (**Watch video 10.1**)

Rational integrals

1. Calculate $\int \frac{1}{x+a} dx$

2. Reduce to common denominator $\frac{2}{x} - \frac{3}{x+3}$

3. Calculate $\int \frac{-x+6}{x^2+3x} dx$

4. Calculate $\int \frac{1}{x^2+3x} dx$

5. Calculate $\int \frac{1}{x^3-x} dx$

Repeated factors

1. Calculate $\int \frac{1}{(x+1)^n} dx$ for $n > 1$

2. Calculate $\int \frac{(x+1) - 1}{(x+1)^2} dx$

3. Calculate $\int \frac{2x+6}{(x+1)^2} dx$

4. Calculate $\int \frac{x^2}{(x+1)^3} dx$

The integral of secant

Compute $\int \sec x \, dx$ using the substitution $u = \sin x$.

Challenge

$$\int \frac{1}{(1+x^2)^2} dx$$