

## Math 266 Second Exam Practice Problems

Evaluate the following integrals.

1.  $\int \frac{\sqrt{x}}{1+x} dx$

2.  $\int \frac{4x-2}{x^3-x} dx$

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

4.  $\int x^2 \tan^{-1} x dx$

5.  $\int \sqrt{x^2+x+1} dx$

6.  $\int (x-x^2)^{3/2} dx$

7.  $\int \frac{4x-2}{x^3-x} dx$

8.  $\int \frac{\sec x \tan x}{\sec x + \sec^2 x} dx$

9.  $\int \sin \sqrt{x} dx$

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

11.  $\int \tan^3 z dz$

12.  $\int \sin^2 \omega \cos^4 \omega d\omega$

13.  $\int \frac{1}{x\sqrt{1+x^2}} dx$

14.  $\int \frac{2x^2-5x-1}{x^3-2x^2-x+2} dx$

15.  $\int \tan^3 4x \sec^4 4x dx$

16.  $\int \cos^6\left(\frac{x}{2}\right) dx$

17.  $\int \frac{\sin \theta - \cos \theta}{\sin \theta + \cos \theta} d\theta$

18.  $\int \frac{x^4}{(x-1)^2} dx$

19.  $\int \frac{e^{\sqrt{\sin x}}}{(\sec x)\sqrt{\sin x}} dx$

20.  $\int \sqrt{\tan \theta} d\theta$