

HW 14: Section 6.3

Due: Thursday, October 28th in SQRC by 9pm

Learning Goals:

- Compute integrals involving trig functions.
- Use trigonometric substitution.
- Combine all our current integration techniques when solving integrals.

Questions:

Solve the integrals:

1. Problem 6.3.2

$$\int \cos^3(x) \sin^4(x) dx$$

2. Problem 6.3.8

$$\int \sin^4(x - 3) dx$$

3. Problem 6.3.12

$$\int \tan(2x + 1) \sec^3(2x + 1) dx$$

4. Problem 6.3.22

$$\int \frac{1}{x^2 \sqrt{16 - x^2}} dx$$

5. Problem 6.3.30

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

6. Problem 6.3.40

$$\int \frac{1}{\sqrt{4 + x^2}} dx$$