

## HW 13: Section 6.2

Due: Thursday, October 24th in SQRC by 9pm

**Learning Goals:**

- Practice computing integrals using  $u$ -sub, integration by parts, and algebraic manipulation.
- Practice identifying the correct method to solve an integral.

**Questions:**

Solve the integrals: 2, 8, 10, 16, 24, 32, 42

1. Problem 6.2.2

$$\int x \sin(4x) dx$$

2. Problem 6.2.6

$$\int \frac{\ln(x)}{x} dx$$

3. Problem 6.2.10

$$e^{2x} \cos(x) dx$$

4. Problem 6.2.16

$$\int \frac{x^3}{(4+x^2)^{3/2}} dx$$

5. Problem 6.2.24

$$\int_1^2 x \ln(x) dx$$

6. Problem 6.2.42

$$\int \tan^{-1}(x) dx$$

7. Problem 6.2.44

$$\int e^{\sqrt{x}} dx$$