

## Homework IV First-Half

Due in class Monday July 30 2017

1. Compute

$$\int x^8 \sqrt{x^3 - 1} dx$$

2. Compute

$$\int x \ln(x^2 + 1) dx$$

3. Compute

$$\int_1^4 \frac{x - \sqrt{x}}{x + \sqrt{x}} dx$$

4. Compute

$$\int_1^e \frac{\ln x}{x} dx$$

5. Compute

$$\int_2^3 \frac{x}{x-1} dx$$

6. The demand function of some goods is  $P = f(Q) = \frac{65}{Q+10}$ , and the supply function is  $P = g(Q) = Q + 2$ . Compute the consumer surplus and producer surplus.