

Homework 10

Exercise 1 Compute the following integrals:

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

2. $\int_0^{\sqrt{\pi/2}} x \sin(2x^2) dx$

3. $\int_0^1 \sqrt{2-x} dx$

4. $\int \frac{x}{(3x^2+5)^2} dx$

5. $\int \frac{e^x}{e^x+1} dx$

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

7. $\int x^2 e^{-x} dx$

8. $\int x^2 (\ln(x))^2 dx$

9. $\int_1^2 \sqrt{x} \ln(x) dx$

10. $\int \sin^3(x) dx$

11. $\int_0^3 \sqrt{3^2-x^2} dx$ *you can use the equality $\cos(x)^2 = \frac{1+\cos(2x)}{2}$*

12. $\int \frac{1}{(x-2)(x-3)} dx$

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

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