

MATH 234: HOMEWORK 7

DUE: (TBA) VIA ILLINOIS COMPASS

1. Suppose that $f(x)$ is an antiderivative of $\frac{2}{\sqrt{x}}$ and that $f(0) = 1$.
What is $f(9)$?

2. Compute:

$$\int \frac{1}{(x+2)^2} dx$$

3. Compute:

$$\int \left(\frac{x^2}{4} - 4 \right) dx$$

4. Compute:

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

5. Compute:

$$\int_{-1}^1 e^{-2x} dx$$

6. Compute:

$$\int_0^1 \left(e^{3x} - \frac{1}{(x+1)^2} \right) dx$$

7. Compute:

$$\int_{-2}^{-1} (x^2 - 2x^{-3} + 3) dx$$

8. What is the area under the curve $2/x$ between $x = 1$ and $x = 3$?

9. What is the area under the curve $1/\sqrt{x}$ between $x = 1$ and $x = 2$?

10. Suppose that during a controlled experiment, the temperature in a test tube at time t is rising at a rate of $6t^2 + 2$ degrees centigrade per minute. If the initial temperature is 0° C, what is the temperature in the test tube after 10 minutes?