

Homework II Second-Half

Due in class Monday July 16 2017

1. Find the most general form of the antiderivatives of

$$f(x) = 5x^4 + 3e^{2x} - \frac{2}{x} - \frac{1}{x^2}$$

on the interval $(0, +\infty)$

2. $f''(x) = 2x^3 - 5x$, $f'(1) = 2$, $f(1) = 4$. What is $f(x)$?
3. Use R_n to compute the area of the region under the curve $y = x + 1$ on $[1, 2]$. (You may need to use $\sum_{i=1}^n i = \frac{n(n+1)}{2}$)
4. $f(x) = |x| - \sqrt{1-x^2}$. What is $\int_{-1}^1 f(x) dx$?
5. Use the Midpoint rule when $n = 6$ to estimate $\int_0^3 x^2 dx$.