

Review Problems

February 17, 2017

1. (Fall 2008, Exam 2, #2) Find the partial fraction decomposition of the function $\frac{2x - 4}{x(x^2 + 4)}$.

2. (Fall 2009, Exam 2, #6) Evaluate $\int_0^1 \frac{1}{\sqrt{x} + 1} dx$.

3. (Fall 2010, Exam 2, #8) Given that $\int_1^2 \frac{1}{x^2 - 2x + 2} dx = \frac{\pi}{4}$, evaluate

$$\int_1^2 \frac{3x + 5}{x^2 - 2x + 2} dx$$

.

4. (Fall 2010, Exam 2, #12) The u -substitution $u = \sqrt{1 + x}$ transforms the integral

$$\int_3^8 \frac{1}{x\sqrt{x+1}} dx$$

into which integral?