

MATH 2300 Fall 2010 Gateway Exam: Practice Problems

Evaluate each of the following integrals.

1. $\int \frac{\sqrt{4 + \sqrt{x}}}{\sqrt{x}} dx$

2. $\int \frac{e^x}{e^{2x} - 2e^x + 1} dx$

3. $\int \frac{8x}{x^2 - 5x + 6} dx$

4. $\int \frac{3}{\sqrt{9 - x^2}} dx$

5. $\int \sin(5x) \cos^4(5x) dx$

6. $\int 5x \cos(x) dx$

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

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

9. $\int x(x - 3)^{20} dx$

10. $\int x^5 e^{-x^3} dx$