

due Wednesday, May 4

This assignment is only for those who did not participate in the Integration Bee on Monday, April 25.

Evaluate as many of the following integrals as you can. You can get up to 2 points for each integral; up to 10 points total for this assignment.

Rules: all indefinite integrals must include “+C”; all logarithms should include absolute value (for example $\ln|x|$) when appropriate.

1.
$$\int \frac{6x^2 + 7x - 5}{3x + 5} dx$$

2.
$$\int \sin(2x) \cos^3(2x) dx$$

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

4.
$$\int \frac{e^{\ln(x^2)}}{x} dx$$

5.
$$\int \frac{\cos^2(x)}{1 - \sin(x)} dx$$

6.
$$\int \frac{1}{x^2 - 100} dx$$

7.
$$\int x\sqrt{2x + 3} dx$$

8.
$$\int \frac{x^2 + x + 2}{x + 1} dx$$

9.
$$\int e^x e^{2e^x} dx$$

10.
$$\int \cos(\pi x) \sqrt{\pi + \sin(\pi x)} dx$$

11.
$$\int (1 - \sin(x))(1 + \sin(x)) \sin(x) dx$$

12.
$$\int \sqrt{x^7 - x^4} dx$$