

Sample midterm answers (note that in the antiderivates the “+ C” is omitted).

4.

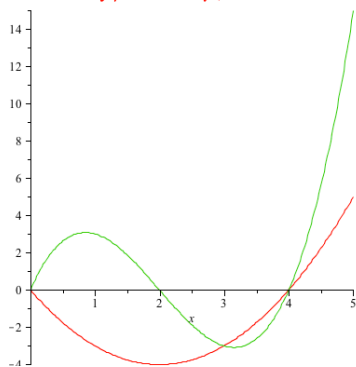
$$\pi \left(\int_0^1 (x - x^4) dx \right)$$

$$\frac{3}{10} \pi$$

3.a

$$\int_0^3 (x^3 - 7x^2 + 12x) dx$$

3.b Answer: 45/4



Problem 2: a and b. Both integral diverge.

1.d

$$\frac{1}{2} e^x \cos(x) + \frac{1}{2} e^x \sin(x)$$

1.c

$$\frac{1}{16} \frac{x}{\sqrt{x^2 + 16}}$$

1.b

$$-\frac{1}{4} \cos(x)^4$$

1.a

$$\ln(x) - 2 \arctan(x)$$