

MATH 141 WORKSHEET 9

Show all work for full credit.

1. Evaluate the integral.

$$\int \frac{x^4 + 3x^2}{(x^5 + 5x^3 + 7)^3} dx$$

2. Evaluate the integral.

$$\int \sec^2(4x) \tan(4x) dx$$

3. Evaluate the integral.

$$\int \frac{x^2 - 9}{2x - 6} dx$$

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4. Evaluate the integral.

$$\int_2^4 (x^3 + 2x - 5) dx$$

5. Evaluate the integral.

$$\int_1^2 2^{x^3-x^2-1}(6x^2 - 4x) dx$$

6. Evaluate the integral.

$$\int \frac{\sin(\sqrt{x})}{\sqrt{x}} dx$$

7. Evaluate the integral.

$$\int \frac{4x}{\sqrt{1-x^4}} dx$$

8. Evaluate the integral.

$$\int_0^{\pi/3} \frac{1}{\cos^2 x} dx$$

9. Evaluate the integral.

$$\int (x+5)^8(x-3) dx$$

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10. Solve the initial-value problem. Find $f(x)$ if:

$$f''(x) = 12x^2 - 6x - 6$$

$$f(1) = 2 \text{ and } f(2) = 4$$

11. Evaluate the integral. (After Friday's lecture.)

$$\int_1^5 |3x^2 - 6x - 24| dx$$