

Integrals and Natural Logarithms - 1

SPRING 2013

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Name _____

Instructions

Answers appear on the ANSWERS page. Solutions appear on the SOLUTIONS page.

1. Compute: $\int (5x^4 + 4x^3 + 6x + 6) dx =$

2. Compute: $\int (\sin(x) + \sec(x) \tan(x)) dx =$

3. Compute: $\int_{x=1}^{x=2} (6x^3 + 4x^2 + 4x) dx =$

4. Compute: $\int (8x^3 + 12x^2)^{10} (x^2 + x) dx =$

5. Compute: $\int \sin(x^3 + 3x^2) (6x^2 + 12x) dx =$

6. Compute: $\int \frac{x+1}{3x^2+6x} dx =$

7. Compute: $\frac{d}{dx} [\ln(\sin(x))] =$

8. Compute: $\frac{d}{dx} [\ln(3x^3 - 9x + 5)] =$

9. Compute: $\frac{d}{dx} \left[\ln \left(\sqrt{\frac{x^2-1}{x}} \right) \right] =$

10. Compute: $\int_{x=-1}^{x=1} (x^2 - 3x + 1)^3 (8x - 12) dx =$