

## Integrals and Natural Logarithms #6

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### Instructions

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

1. Compute:  $\int (3x^6 + 5x^4 - 6x^2 + 2\sqrt{x}) dx =$

2. Compute:  $\int (4 \sec(x) \tan(x) - 8 \csc(x) \cot(x)) dx =$

3. Compute:  $\int_{x=-1}^{x=2} (4x^3 - 8x^2 + 2) dx =$

4. Compute:  $\int (3 \sin(x) + 5)^5 \cos(x) dx$

5. Compute:  $\int \cos(2x + 1) dx =$

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

7. Compute:  $\frac{d}{dx} [\ln(\csc(x) + 4)] =$

8. Compute:  $\frac{d}{dx} [\ln(5x^3 - 2x^2)] =$

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

10. Compute:  $\int_{x=0}^{x=1} (3x - 1)^4 dx$