

In problems 1 –2 verify that $F(x)$ is an antiderivative of the integrand $f(x)$ and use Part 2 of the Fundamental Theorem to evaluate the definite integrals

$$1. \int_2^5 \frac{1}{x} dx, F(X) = \ln(x) + 4$$

$$2. \int_1^4 3x^2 dx, F(x) = x^3 + 2$$

In problem 3 use the Antiderivatives and Definite Integrals Theorem to evaluate the integrals

$$3. \int_1^3 6x^2 dx, \int_1^2 6x^2 dx, \int_0^3 6x^2 dx,$$