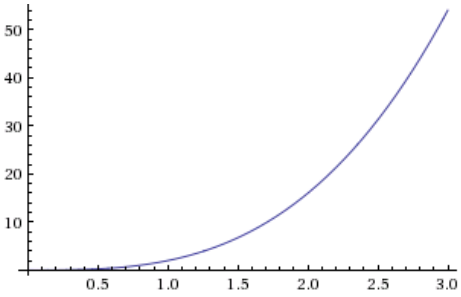
Answer on Question #48164 – Math – Integral Calculus

Describe the area represented by the definite integral $\int_0^3 2x^3\ dx$.

Solution



This integral represents the area below the curve $y = 2x^3$. The value of the integral above is

$$\int_0^3 2x^3\ dx = \int_0^3 2\ d\left(\frac{x^4}{4}\right) = 2\left(\frac{x^4}{4}\right)_0^3 = \frac{3^4}{2} = 40.5.$$