

Integration and Differentiation are Inverse Operations

$\int F(x) dx = \frac{1}{12} x^4 + \frac{5}{2} x^2 + Cx + D$

$F(x) = \frac{1}{3} x^3 + 5x + C$

$f(x) = x^2 + 5$

$f'(x) = 2x$

$f''(x) = 2$

$f'''(x) = 0$

arbitrary constant

$\int 2x dx$

$x^2 + \pi$
 $x^2 + 5$
 $x^2 - 1$

$2x$
 $2x$