

1. Use the function f and the given real number a to find $(f^{-1})'(a)$.

$$f(x) = \sqrt{x-4} \text{ , } a = 2$$

2. Find the derivative of the function.

(a) $y = \frac{e^{2x}}{e^{2x} + 1}$

(b) $y = \log_3(x^2 - 3x)$

3. Find the integral.

$$\int_{-2}^1 x^2 e^{\frac{x^3}{2}} dx$$