

Review

1. find the derivative of the following.

$$x^4 + 6x^3 + 24x - 32$$

2. find the derivative of the following function by using the product rule.

Treat α like a variable.

$$\alpha^3 \sqrt{\alpha}$$

3. find the derivative of the function using the chain rule.

$$y = \sin(3x^2 - 4x)$$

4. evaluate the following integral.

$$\int_1^6 \frac{1}{x^3 \sqrt{6x^2 - 9}} dx$$

5. solve the following differential equation.

$$(3 + \tan(y))y' = x^3 + 1$$