Friday, February 15, 2019 12:28 PM

$$\int_1^3 2x^3 - \frac{4}{x}\,dx$$

$$\frac{1}{2}x^4 - 4\ln x \Big|_1^3$$

$$= \frac{1}{2}(3)^4 - 4\ln 3 - \left(\frac{1}{2}(1)^4 - 4\ln(1)\right)$$

$$\frac{81}{2} - 4\ln 3 - \left(\frac{1}{2}\right)$$

$$40 - 4\ln 3$$

$h(x) = f(g(x))$ $h'(2)$

$h'(x) = f'(g(x)) \cdot g'(x)$

$f'(g(2)) \cdot g'(2)$

$f'(4) \cdot 9$

$-2(9)$

-18

$$h(x) = f(\sqrt[3]{x})$$

$$h'(x) = f'(\sqrt[3]{x}) \cdot \frac{1}{3} x^{-2/3}$$

$$= f'(2) \cdot \frac{1}{3 \cdot 8^{2/3}}$$

$$= -3 \cdot \frac{1}{3 \cdot 2^2} = -\frac{1}{4}$$