5.4 Fundamental Theorem of Calculus

Fundamental Theorem of Calculus

$$\frac{d}{dx}\int_a^x f(t)\,dt = f(x)$$

Ex 1) $\frac{d}{dx}\int_7^x 2t\,dt =$

Ex 2) $\frac{d}{dx}\int_{13}^{x} \cos t \, dt =$

Ex 3) $\frac{d}{dx}\int_{1,000,007}^{x} n^3 \, dn =$

Ex 4) $\frac{d}{dx}\int_{x}^{7} 2t \, dt =$

Ex 5) $\frac{d}{dx}\int_{x}^{5} \sqrt{(u+1)} \, du =$

Ex 6) $\frac{d}{dx}\int_3^{x^2} 2t\, dt =$

Ex 7) $\frac{d}{dx}\int_4^{x^2} (\cos k)\, dk =$

Ex 8) $\frac{d}{dx}\int_{x}^{x^2}(2t^2+3)\,dt =$

Ex 9) $\frac{d}{dx}\int_{x^2}^{x^3}(\sin t)\,dt =$