

Second Fundamental Theorem of Calculus

Date _____ Period _____

For each problem, find $F'(x)$.

1) $F(x) = \int_1^x (2t - 2) dt$

2) $F(x) = \int_1^x (t - 1) dt$

3) $F(x) = \int_{-3}^x (-t^2 - 2t - 3) dt$

4) $F(x) = \int_{-\frac{\pi}{6}}^{x^2} \sec^2 t dt$

5) $F(x) = \int_{-2}^{x^2} 3e^t dt$

6) $F(x) = \int_1^{3x} \frac{5}{(t + 1)^3} dt$

7) $F(x) = \int_1^{3x} \frac{2}{t} dt$

8) $F(x) = \int_{-5}^{x^2} 3e^{t+3} dt$

$$9) F(x) = \int_3^{2x} 3(t-3)^{\frac{1}{2}} dt$$

$$10) F(x) = \int_x^{2x} 5t^{\frac{1}{2}} dt$$

$$11) F(x) = \int_x^{2x} (-t^3 + 2t^2 + 1) dt$$

$$12) F(x) = \int_x^{x^2} -2e^t dt$$

$$13) F(x) = \int_x^{x^2} -\frac{4}{t} dt$$

$$14) F(x) = \int_x^{x^2} -2\cos t dt$$

$$15) F(x) = \int_x^{x^2} \frac{2}{(t+3)^3} dt$$

$$16) F(x) = \int_{-2}^{x^2} 3(t+2)^{\frac{1}{2}} dt$$