

Class 13: The Second Fundamental Theorem of Calculus And Some Other Stuff about Anti-Derivatives Calculus II

College of the Atlantic. Feb 6, 2023

1. Write down a function $F(x)$ whose derivative is $f(x) = x^5$.
2. Write down a function $F(x)$ whose derivative is $f(x) = x^5$ and for which $F(0) = 7$.
3. Write down an expression for a function $\text{Si}(x)$ whose derivative is $\sin(x)/x$ and for which $\text{Si}(0) = 0$.
4. Write down an expression for a function $\text{Si}_1(x)$ whose derivative is $\sin(x)/x$ and for which $\text{Si}_1(10) = 0$.
5. Write down an expression for a function $\text{Si}_2(x)$ whose derivative is $\sin(x)/x$ and for which $\text{Si}_2(10) = 5$.
6. Evaluate $\text{Si}(8)$.

In Exercises 7–10, let $F(x) = \int_0^x f(t) dt$. Graph $F(x)$ as a function of x .

