Note: $\int f(x) \, dx$ and $f(x)$ are both

block = $f$

Graph $g(x) = \int f(x) \, dx$ at

Comment: Four lost times
\[ g(t) = \int_0^t \frac{v(t)}{\sqrt{1-v(t)^2}} \, dt = \frac{3}{2} \]

\[ g(3) = \int_0^3 \frac{v(t)}{\sqrt{1-v(t)^2}} \, dt = \frac{3}{2} \]

\[ g(1) = \int_0^1 \frac{v(t)}{\sqrt{1-v(t)^2}} \, dt = \frac{1}{2} \]

\[ g(2) = \int_0^2 \frac{v(t)}{\sqrt{1-v(t)^2}} \, dt = \frac{1}{2} \]

\[ g(6) = \int_0^6 \frac{v(t)}{\sqrt{1-v(t)^2}} \, dt = 3 \]

\[ \int_0^6 \frac{v(t)}{\sqrt{1-v(t)^2}} \, dt = 3 \]

Graph \[ g(x) = \int x^2 \, dt \]
\[ \frac{b-a}{a} \int_a^b f(x) \, dx = \text{Area} \]

\[ \text{Area} = \lim_{n \to \infty} \sum_{i=1}^{n} f(a + \frac{b-a}{n} i) \frac{b-a}{n} \]

Diagram: A shaded area under the curve from a to b.
\[ f(x) = -\arctan(x) \]

So \( f(1) = -\arctan(1) \)

\[ F(x) = \int_{-\infty}^{x} \frac{1}{1 + t^2} \, dt = \tan^{-1}(x) \]

\[ F(1) = \frac{\pi}{4} \]

\[ 9.6 = \int_{0}^{3} \sin(t) \, dt \]

\[ 6 = \int_{0}^{2} \sin(t) \, dt \]

\[ 6.1 \]
So here, \( y(x) = \text{arctan}(\frac{x}{p}) = \text{arctan}(\frac{t}{c}) \).

\[
\frac{\pi}{2} \geq y(x) \geq \frac{-\pi}{2}, \quad y(x) \text{ would }= \text{arctan}(x).
\]

Try: \( \sin \theta = \frac{x}{p} \) \( \frac{\pi}{2} \geq ) \frac{x}{p} \geq \frac{-\pi}{2} \),

\[
\int_{-\pi/2}^{\pi/2} \frac{d\theta}{1 + \tan^2(\theta)} = \int \frac{dx}{1 + x^2} = \text{arctan}(x).
\]

\[
\int_{-\pi/2}^{\pi/2} \frac{dx}{1 + x^2} = \frac{\pi}{2}
\]

\[
\text{Note: } y(x) = \text{arctan}(x) \text{ is } y(x) = \frac{\pi}{2} \text{ to } y(x) = \text{arctan}(t) \text{ at }\]

\[
\text{Note: } y(x) = \frac{\pi}{2} \text{ to } y(x) = \text{arctan}(t) \text{ at }\]

\[
\text{Note: } y(x) = \frac{\pi}{2} \text{ to } y(x) = \text{arctan}(t) \text{ at }\]

\[
\text{Note: } y(x) = \frac{\pi}{2} \text{ to } y(x) = \text{arctan}(t) \text{ at }\]
\[ y = \int \frac{\cos(t)}{t} \, dt \]

\[ \frac{dy}{dx} = \frac{d}{dx} \left( \int \frac{\cos(t)}{t} \, dt \right) \]

\[ = \frac{\cos(t)}{t} \cdot \frac{d}{dx} \]
\[ \int 3 \sin^2(x) \cos(x) dx = \frac{3}{2} \sin^3(x) + C \]

So

\[ \int \csc(x) dx = \sin(x) + C \]

\[ \Rightarrow \quad \csc(x) \sin(x) = \csc(x) \]

Chain Rule

Finding Antiderivatives by Reversing the
\[ \frac{1}{3} \int 3x^2 \cos(x^3) \, dx = \frac{1}{3} \sin(x^3) + C \]

\[ \text{Thus, } \int x^2 \cos(x^3) \, dx \]

You will be asked to state the lifetime.