

A Brief Review for our Chapter 4 Quiz

$$\int \sqrt[3]{x} \, dx = \frac{3}{4} x^{\frac{4}{3}} + C$$

$$\int_{\frac{\pi}{4}}^x \sec^2 t \, dt = \tan t \Big|_{\frac{\pi}{4}}^x$$

$$= \tan x - 1$$

$$\frac{d}{dx} \int_{\frac{\pi}{4}}^x \sec^2 t \, dt = \sec^2 x$$

$$\frac{d}{dx} \int_x^3 t^5 \, dt = \frac{d}{dx} \left[- \int_3^x t^5 \, dt \right]$$

$$= -x^5$$

$$\int_0^{\frac{\pi}{3}} \sin x \, dx = -\cos x \Big|_0^{\frac{\pi}{3}}$$

$$= -\cos\left(\frac{\pi}{3}\right) - (-\cos 0)$$

$$= -\frac{1}{2} + 1$$



If $\int_3^7 f(x) dx = 5$, then what is the value of

$$\int_3^7 [f(x) + 2] dx?$$

use ADDITION RULE

$$\int_3^7 f(x) dx + \int_3^7 2 dx$$
$$= 5 + 8$$

$$\int_3^7 2 dx = 2x \Big|_3^7$$

If $\int_0^{10} g(x) dx = 10$ and $\int_0^5 g(x) dx = 3$, then what is the

value of $\int_5^{10} g(x) dx$?

use SUBTRACTION

$$\int_0^{10} g(x) dx - \int_0^5 g(x) dx = \int_5^{10} g(x) dx$$
$$10 - 3 = 7$$

If $f(x)$ is an even function and $\int_0^{11} f(x) dx = 7$, then

what is the value of $\int_{-11}^{11} f(x) dx$?

$$= 2 \int_0^{11} f(x) dx$$

SYMMETRIC ABOUT y-AXIS = 14

If $g(x)$ is an odd function and $\int_0^{11} g(x) dx = 7$, then

what is the value of $\int_{-11}^{11} g(x) dx$?

SYMMETRIC ABOUT ORIGIN = 0