5.7-Antiderivatives

F is an antiderivative of f if and only if

Antiderivative Rules:

Derivative	Original Function	Derivative	Original Function

***Examples*:**

Find the most general antiderivative of $f(x) = x - \sqrt[4]{x}$

Find $f(x)$ **given** $f'(x) = \dfrac{1+x}{\sqrt{x}}$ **and** $f(1) = 0$

Find $f(x)$ given $f''(x) = 1 + 2\sin x - \cos x$, $f(0) = 3$, and $f'(0) = 1$

Find $f(x)$ given $f'(x) = e^x - \dfrac{1}{x}$ and $f(1) = 0$.

The acceleration of a particle is given by $\mathbf{a}(t) = 2t\mathbf{i} + 3\mathbf{j}$. If the initial velocity is $\mathbf{i} - \mathbf{j}$ and the initial position is $< 1, 2 >$, find the position function $\mathbf{r}(t)$ of the particle.

On Your Own: 5.7 #2,5,6,8,11,13,24,25,27,29,30,33,43,44,45,61,64,74,77,79,80