

Example: $\frac{dy}{dx} = f(x)$

We'll solve our first, very simple, example using the method of separation of variables. We start by multiplying both sides by dx :

$$dy = f(x) dx.$$

Then integrate both sides:

$$\int dy = \int f(x) dx$$

The antiderivative of dy is just y , so we get:

$$y = \int f(x) dx,$$

as we did before.

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