Linear Equations

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- A first-order linear differential equation takes the form:

$$a_1(x)\frac{dy}{dx} + a_0(x)y = g(x)$$

- The standard form (where $P(x) = \frac{a_0(x)}{a_1(x)}$ and $f(x) = g(x)$) is as follows:

$$\frac{dy}{dx} + P(x)y = f(x)$$