Sec1.2

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1 1.2 Integrals as General and Particular Solutions

1.0.1 first-order equation:

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

- General Solution
- Particular Solution

1.1 Example

$$\frac{dy}{dx} = 2x + 3, \qquad y(1) = 2$$

1.1.1 second-order equation:

$$\frac{d^2y}{dx^2} = g(x)$$

1.2 Velocity and Accelaraion

- positions function
$$x = f(t)$$
- velocity
$$v = \frac{dx}{dt}$$
- accelation
$$a = \frac{dv}{dt} = \frac{dx^2}{dt^2}$$