

~~Method of Integrating~~

Method of Integrating Factor

Step 1: Write the differential equation in standard form.

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

Step 2: Identify $P(x)$

Step 3: Find the integrating factor $M(x)$

$$M(x) = e^{\int P(x) dx}$$

Step 4: Multiply by $M(x)$ on both side of the standard form differential equation.

Step 5: Substitute for the LHS

$$\frac{d}{dx} [M(x) \cdot y]$$

Step 6: Solve the equation to obtain the general solution