

$$\frac{dz}{dx} + \frac{2}{x} z = 2$$

$$P = \frac{2}{x}, Q = 2$$

$$\int P \cdot dx = 2 \ln x$$

$$\therefore IF = e^{\int P dx} = e^{2 \ln x} = e^{\ln x^2} = x^2$$

$$2 \cdot IF = \int Q \cdot IF dx$$

$$2 \cdot x^2 = \int 2x^2 dx$$

$$x^2 = \frac{2}{3} x^3 + C$$

$$\frac{1}{y^2} = \frac{2x}{3} + \frac{C}{x^2}$$

$$\frac{1}{y^2} = \frac{2x}{3} + \frac{C}{x^2}$$

$$y^2 = \frac{3}{2x} + \frac{x^2}{C}$$

$$y = \sqrt{\frac{3}{2x} + \frac{x^2}{C}}$$