Örnek: $y' + y = y^2(\cos x - \sin x)$ çöz. Bernoulli Denklemi

y^{-2} ile çarpıcağız.

$$y' \cdot y^{-2} + y^{-1} = \cos x - \sin x$$

$$U = y^{1-n} \rightarrow y^{1-2} = y^{-1}$$

$$U' = -1 \cdot y^{-2} \cdot y'$$

$$-U' + U = \cos x - \sin x$$

$$U' - U = \sin x - \cos x \quad \rightarrow \text{lineer denklem}$$

(-1: $P(x)$, $\sin x - \cos x$: $Q(x)$)

$$\lambda = e^{\int P(x)dx} = e^{\int -1 dx} = e^{-x}$$

$$U = \lambda^{-1} \int \lambda \cdot Q(x) dx = e^{x} \int e^{-x} \cdot (\sin x - \cos x) dx$$

$$U = e^{x} \int \underbrace{(e^{-x} \cdot \sin x - e^{-x} \cos x)}_{(-e^{-x} \cdot \sin x)'} dx$$

$$U = e^{x}(-e^{-x} \sin x + c) = \sin x + c e^{x}$$

$$y^{-1} = \sin x + c \cdot e^{x}$$

$$\boxed{y = \frac{1}{\sin x + c\, e^{x}}} \rightarrow \text{Genel çözüm}$$