$x^2 y' + xy = 1$

$\cos x \frac{dy}{dx} + y \sin x = 1$

$y\,dx - 4(x + y^6)\,dy = 0$

$L \frac{di}{dt} + Ri = E$ LRE constants $i(0) = i_0$

Initial Cond.

$(x+1)\frac{dy}{dx} + y = \ln x$ $y(1) = 10$

Bern.

$\frac{dy}{dx} = y(xy^3 - 1)$

Initial Cond.

$x^2 \frac{dy}{dx} - 2xy = 3y^4$ $y(1) = \frac{1}{2}$

$xy(1 + xy^2)\frac{dy}{dx} = 1$ $y(1) = 0$