

2.3 Linear Equations

Supplemental Instruction
Iowa State University

Leader: Kim C.

Course: Math 267

Instructor: Dr. D'Alessandro

Date: 8/29/17

Find the general solution of the given DE. Give the largest interval over which the general solution is defined.

1. $y' + 3x^2y = x^2$

2. $x \frac{dy}{dx} + 4y = x^3 - x$

3. $\cos x \frac{dy}{dx} + (\sin x)y = 1$

4. $x^2y' + x(x+2)y = e^x$

Solve the given initial-value problem. Give the largest interval over which the solution is defined.

5. $xy' + y = e^x$, $y(1) = 2$

6. $\frac{dy}{dx} = x + 5y$, $y(0) = 3$