

## Diff.Eq. Final Exam Problem Set

G.Buthusiem

1. Solve the separable DE:  $\frac{dy}{dx} + 2xy^2 = 0$

2. Solve the linear DE:  $3\frac{dy}{dx} + 12y = 4$

3. Solve  $2y'' + 4y' + 3y = 0$

4. Solve  $y'' - 2y' + y = x^3 + 4x$

5. Solve  $x^2y'' - xy' + y = 2x$

6. Find two power series solutions of the given DE about the ordinary point  $x = 0$ :  
 $(x^2 + 1)y'' - 6y = 0$

See Previous Review Sheets for Answers