

Due to some confusion about question 2 from Exam 2, I have made up a similar problem that will allow you to earn back up to three points for that question. This problem will be graded all or nothing. If you do it *completely* correctly and turn it in by the **beginning of class on Friday, June 5**, then you will get a maximum of three points added to your exam score. You will receive three points if you lost three or more points on question 2; if you missed fewer than three points, then you will receive however many points you need to get full credit for that problem. If you make *any* mistakes in the following problem, you will not receive any extra points on your exam.

1. (a) Show that the functions  $x$ ,  $x^{37}$ , and  $\frac{1}{x^5}$  form a fundamental set of solutions to the differential equation

$$x^3y''' - 30x^2y'' - 185xy' + 185y = 0, \quad x > 0.$$

- (b) What is the general solution of the equation?