MATH 3430-02 QUIZ 6

Name: _____

Consider the following ODE:

$$t^2y'' - 2ty' + 2y = 2t^3, \qquad t > 0.$$

Suppose that you know that

$$y_1(t) = t, \qquad y_2(t) = t^2$$

are homogeneous solutions. Find a particular solution using the method of *variation of parameters*. I provide the following formula to help you:

$$u_1 = (-)\int \frac{g(t)}{W[y_1, y_2](t)} y_2(t)\mathrm{d}t, \qquad u_2 = \int \frac{g(t)}{W[y_1, y_2](t)} y_1(t)\mathrm{d}t.$$