

CHALLENGING PROBLEM FOR CALC4 (MAR. 12, 2014)

Name: \_\_\_\_\_ RUID: \_\_\_\_\_

Email: \_\_\_\_\_

Verify that  $y_1(x) = \sin x^2$  is a solution of the equation

$$xy''(x) - y'(x) + 4x^3y(x) = 0, x > 0$$

and find the general solution using reduction of order.