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Math 202, Section 3
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Quiz 2
Version A

Instructions: Show Your Work!

1. (5 pts) Show that the two-parameter family of functions

$$y = \frac{c_1}{\sqrt{x}} + \frac{c_2}{x} + \frac{x^2}{15} - \frac{x}{6}$$

is the general solution of the nonhomogeneous differential equation

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

on the interval $(0, \infty)$.

2. (5 pts) Given that $y_1 = \cos 4x$ is a solution of

$$y'' + 16y = 0,$$

use reduction of order (not the formula) to find a second solution on an appropriate interval.