

Math 240 - Quiz 5

February 23, 2023

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (5 points) Solve: $y'' - 3y' - 10y = 0$; $y(0) = 3$, $y'(0) = -4$

2. (4 points) Solve: $y''' - 8y'' + 16y' = 0$

3. (1 points) It is easy to verify that $y_1(x) \equiv 1$ and $y_2(x) = \ln x$ are linearly independent solutions of $y'' + (y')^2 = 0$. It is also easy to verify that $y(x) = c_1y_1(x) + c_2y_2(x)$ is, in general, NOT a solution. Explain why the linear combination of solutions is not a solution.