Quiz #3 (EngMath I) [Thursday, October 11, 2018]

Name: _____   Dept: _____   ID No: _____

1. (10 points) Using Laplace transforms, solve the following system of differential equations

$$
\begin{aligned}
y_1' &= -2y_1 - 3y_2, \quad y_1(0) = 1 \\
y_2' &= 3y_1 + 4y_2, \quad y_2(0) = 0.
\end{aligned}
$$

2. (15 points) Without using Laplace transforms, find the general solution of

$$\begin{aligned} y_1' &= -2y_1 - 3y_2 \\ y_2' &= 3y_1 + 4y_2 \end{aligned}$$