Name: _____
MAP 2302 – Ordinary Differential Equations 1
October 9, 2015
Week 7 Worksheet

1. Let $z = x + iy$, where $x, y \in \mathbb{R}$. Euler's formula states that $e^z = e^x [\cos(y) + i \sin(y)]$. Use Euler's formula to write $e^{\ln 2 + i\pi/6}$ in the form $a + bi$.

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2. Solve the IVP $y'' + 4y' + 13y = 0$, $y(\pi/3) = 0$, $y'(\pi/3) = -3$.

$\square$

3. Solve the IVP $y'' + 10y' + 25y = 0$, $y(0) = 1$, $y'(0) = 0$.

$\square$

4. Solve the DE $y'' + 10y' + 25y = 0$ again using the method of D'Alembert.