Math 307 Quiz 4

May 2, 2014

Problem 1. Express the complex number

$$\frac{2+3i}{5-2i}$$

in standard form (in other words, as something of the form $a+ib$ for some real numbers a, b).

Problem 2. Find the general solution to each of the following homogeneous ordinary differential equations with constant coefficients.

(a) $y'' - 5y' + 6y = 0$

(b) $y'' - 10y' + 25y = 0$

(c) $2y'' - 3y' + 4y = 0$

Problem 3. Find the unique solution to the following initial value problem

(a) $y'' + 2y' + 2y = 0$, $y(0) = 1$, $y'(1) = -1$.