## QUIZ 3

**Problem 1.** Solve the initial value problem

$$y'' - 2y' + 2y = \delta(t-1) \quad y(0) = 0,\, y'(0) = 2.$$

**Problem 2.** Solve the initial value problem

$$y'' + y = H(t-2) + t, \quad y(0) = 0,\; y'(0) = 0.$$

**Problem 3.** Find an inverse Laplace transform for the function

$$F(s) = \frac{5}{s^2(s^2+s+1)}$$

**Problem 4.** Solve the initial value problem

$$y'' - 2y' + y = sin(t)\delta(t-\pi) + 1 \quad y(0) = 1,\, y'(0) = 0.$$