Math 3280 Worksheet 36: Review problems (ungraded)

(1) Find a basis for the subspace of solutions to the linear system

$$2y + z = 0$$
$$x + 6y - z = 0$$

(2) Find the general solution to $y^{(4)} + 6y''' + 13y'' = 0$.

(3) Solve the initial value problem $y'' + 2y' = 3 + 4\sin(2t)$, $y(0) = 0$, $y'(0) = 2$.

(4) Use the method of variation of parameters to find the general solution of $y'' + 4y' + 4y = t^{-2}e^{-2t}$.