# MAE598/494 Design Optimization Homework 1

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**Problem 1.a)**

Use initial point: x0 = (2, 2, 2, 2, 2) to solve:

minimize:
$(x1 - x2)^2 + (x2 + x3 - 2)^2 + (x4 - 1)^2 + (x5 - 1)^2$

subject to:
$x1 + 3x2 = 0$
$x3 + x4 - 2x5 = 0$
$x2 - x5 = 0$
$-10 <= xi <= 10, i = 1, ..., 5$

(Refer next page for solution using the Excel Solver and Matlab's *fmincon* solver.)