

**** MA420-520 HW Assignment Sets posted ****

(This list might be updated during the semester)

Notation. 2.3[2.2], where 2.2 is the section number for that problem #3 in Chapter 2

Due time: 2:05pm on due days.

Week 3 HW2a (due Week 3, W): 2.1[2.1], 2.3[2.2], 2.6(a, b)[2.2], 2.19[2.1],

Week 5 HW2b (due Week 5, W): 2.5[2.3], 2.17[2.3], 2.18[2.3],
Additional for MA520: 2.13[2.4], 2.20[2.1].

(2.17). Solve the following problem

minimize $|y|$

subject to $x + y \leq 1$, $2x + y = 3$, $x \geq 0$.

You may use graphs for assistance.

(2.18). Convert the following problem to a linear program in the standard form and solve.

maximize $z = -x_1 - 4x_2 - x_3$

subject to $2x_1 - 2x_2 + x_3 = 4$

$x_1 - x_3 = 1$

$x_1 \geq 0$, $x_2 \geq 0$, $x_3 \geq 0$.

(2.19). Convert the following problem to an equivalent linear program in the standard form, displaying A, b, and c.

minimize $|y|$

subject to $x + y \leq 1$, $2x + y = 3$, $x \geq 0$.

(2.20). Convert the following problem to an equivalent linear program (not necessarily in the standard form).

minimize $\max\{2x - 3y, -3x + 4y\}$

subject to $x + 2y = 5$, $x \geq 0$, $y \geq 0$.

Justify the equivalence.