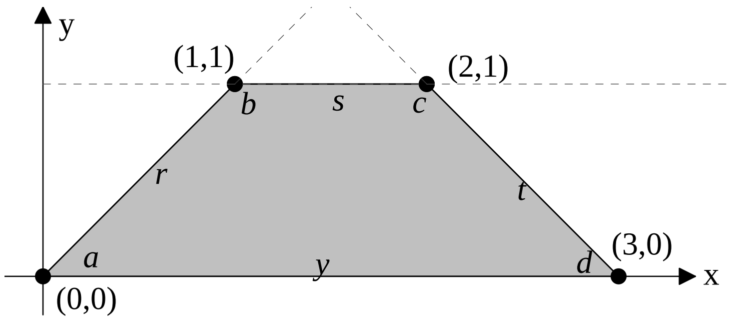
Math 414 Hw 9 Name ____ Score____/ 20

Hw 99: 2, 61:2. Recommended 58: 7, 9. Due at the beginning of Lecture 10, not on exam day.

Problem 1(5). (Not a text problem.)



standard	canonical
max $z = 2x+y$	max $z = 2x+y$
with	with
r: $-x + y \leq 0$	r: $-x + y + r = 0$
s: $y \leq 1$	s: $y + s = 1$
t: $x + y \leq 3$	t: $x + y + t = 3$
$x, y \geq 0$	$x, y, r, s, t \geq 0$

For the extreme c, fill in the values: z = _____,

x = _____, y = _____, r = _____, s = _____, t = _____

List the basic variables for c? ________, for d? _______

What point has the basic variables $\{x, r, s\}$? _______.

What point has the basic variables $\{x, y, t\}$? _______.

Page 99 Read the problem in the text.

2(6). State what your variables stand for. Write the problem as a general linear programming problem. Then solve it using Linsolve or by hand. There should be two variables plus the objective variable. Don't forget the last ...≥0 line. Remember to convert time to common units.

Page 61 Read the problem in the text.

2(6). Simplify this problem by deleting the last 3 digits of every dollar amount and deleting the last 6 digits of amounts measuring the number of male readers or number of exposures (which will be measured in millions). Thus $35,335 and $200,000 become 35 and 200; 4,312,000 and 16,000,000 become 4 and 16.

Let r = # of male readers, v = # of TV Guide ads / month, n = # / month in Newsweek, t = # / month in Time.

Max r =

with

1:

2:

3:

4:

5:

6:

$v, n, t \geq 0$

Round v, n, t, n, r to the nearest integer. We'll accept the roundoff errors. The total number of ads / month should be at least 5.

$v =$	$n =$
$t =$	$r =$

CONVENTION. To write a basic solution one need only list the basic variables and their values. We often list the objective value too. The unlisted parameters are 0.

- If the variables are x, y, u, v and z is the objective variable, then

$x = 3$ means $x\ y\ u\ v\ \ z$

$v = 5$ $3\ 0\ 0\ 5\ 13$

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Problem 3 (3). (Not a text problem.)

Given the basic feasible solutions below, connect the adjacent ones with lines. Should be 9 lines.

Circle the extremes which form a path from the initial bottome extreme to the maximal extreme such that at each step the next extreme is the adjacent extreme with the largest objective value (last number). Should circle 3 extremes on a path from the bottom to the top.