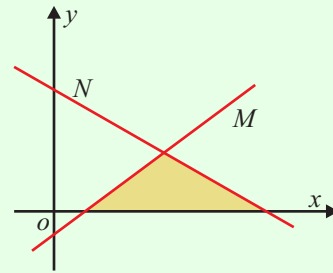


LINEAR PROGRAMMING (Q 11, PAPER 2)

1999

- 11 (a) The equation of the line M is $x - y - 1 = 0$
and the equation of the line N is $x + 2y - 6 = 0$.
Write down the three inequalities which define
the triangular region indicated in the diagram.



- (b) A company uses small trucks and large trucks to transport its products in crates.
The crates are all of the same size.

On a certain day 10 truck drivers at most are available. Each truck requires one driver only.

Small trucks take 10 minutes each to load and large trucks take 30 minutes each to load. The total loading time must not be more than 3 hours. Only one truck can be loaded at a time.

- (i) If x represents the number of small trucks used and y represents the number of large trucks used, write down two inequalities in x and y .

Illustrate these on graph paper.

- (ii) Each small truck carries 30 crates and each large truck carries 70 crates.
How many of each type of truck should be used to maximize the number of crates to be transported that day?

ANSWERS

11 (a) $x - y - 1 \geq 0$, $x + 2y - 6 \leq 0$, $y \geq 0$

(b) (i) $x + y \leq 10$, $x + 3y \leq 18$

(ii) $x = 6$, $y = 4$