1997

11 (a) On one diagram, illustrate the set of points (x, y) that satisfy the three inequalities

$$x + y \leq 7$$
$$2x + y \geq 8$$
$$y \geq 0.$$

(b) A factory, which manufactures television sets makes two types of set - a wide screen model and a standard model.

In any week, 500 sets at most can be manufactured.

Each wide screen model costs IR£200 to produce. Each standard model costs IR£150 to produce. Total weekly production costs must not be greater than IR£90,000.

(i) If the factory manufactures x of the wide screen model and y of the standard model, write down two inequalities in x and y and illustrate these on graph paper.

(ii) If the profit on a wide screen model is IR£100 and the profit on a standard model is IR£70, how many of each type of set should be manufactured in order to maximise profit?

ANSWERS

11 (b) (i) $x + y \leq 500$, $4x + 3y \leq 1800$

(ii) $x = 450$, $y = 0$