3E1 February 26, 2003

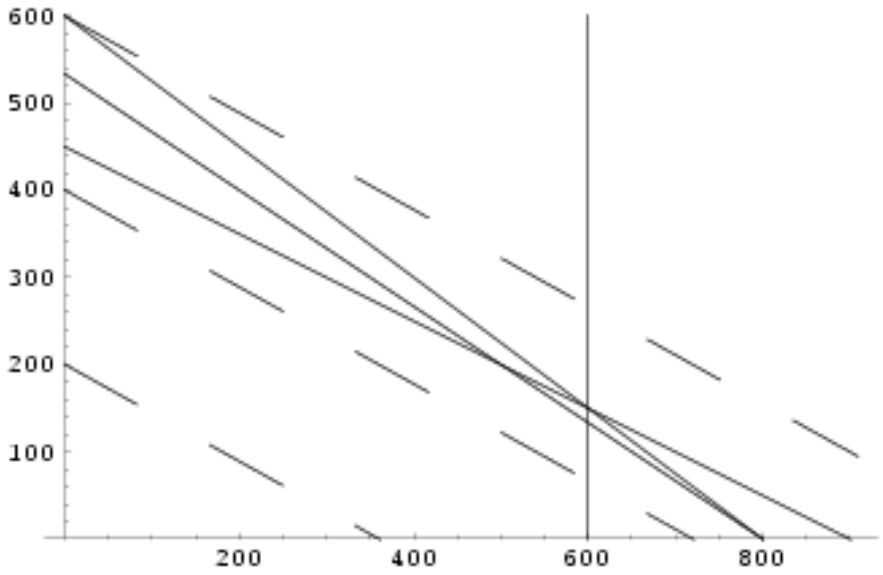
Linear programming example

Our example had the following constraints

$$\begin{array}{rcrcr} 3x & + & 4y & \leq & 2400 \\ x & + & 2y & \leq & 900 \\ 2x & + & 3y & \leq & 1600 \\ 2x & & & \leq & 1200 \end{array}$$

and the problem was to maximise $z = 5x + 9y$ subject to the above inequalities plus $x \geq 0$, $y \geq 0$.

Here is a graph of the constraints. Feasable region is under (left of) all lines and in first quadrant. Dashed lines show $z = 1800$, $z = 3600$ and $z = 5400$.



Corners of the feasable region are at $(0, 0)$, $(600, 0)$, $(600, 400/3)$, $(500, 200)$ and $(0, 450)$.