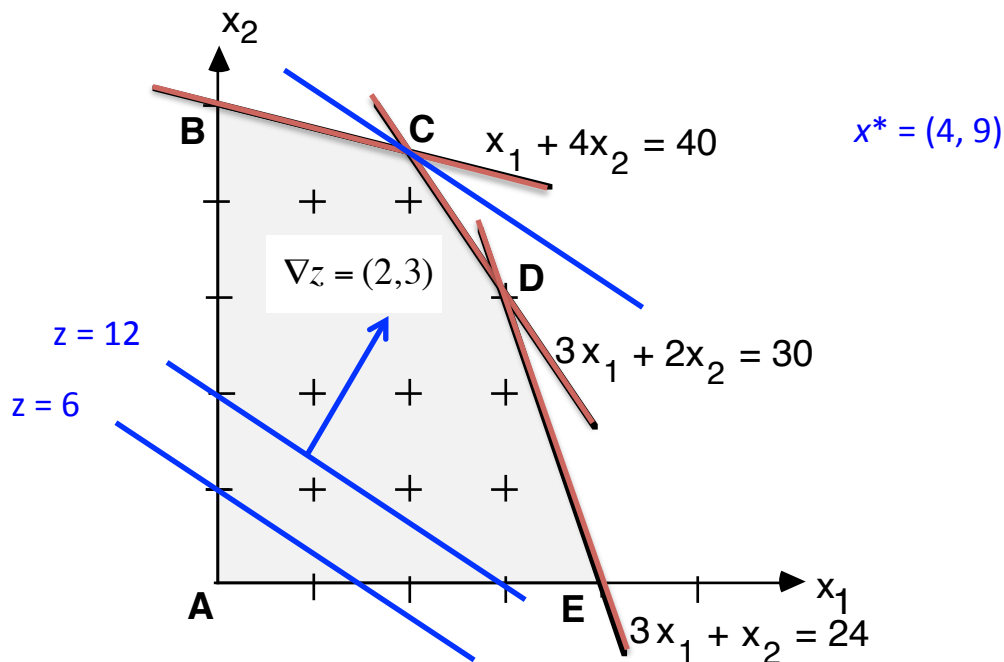


## Geometrical Interpretation

Consider the linear program:

$$\begin{aligned} \max \quad & z = 2x_1 + 3x_2 \\ \text{s.t.} \quad & x_1 + 4x_2 \leq 40 \\ & 3x_1 + 2x_2 \leq 30 \\ & 3x_1 + x_2 \leq 24 \\ & x_1, x_2 \geq 0 \end{aligned}$$

Graph the *feasible region*: the set of all points  $(x_1, x_2)$  in the plane satisfying the constraints.



Feasible region is bounded by lines (*hyperplanes*); it is a *polyhedron* – the intersection of half-planes (*half-spaces*).

*Corner points* A, B, C, D, E of the feasible region: determined by intersection of 2 lines.