$X_1 =$ Units of product P1 with smelting at PRODA, S.A.

$X_2 =$ Units of product P1 with subcontracted smelting

$X_3 =$ Units of product P2 with smelting at PRODA, S.A.

$X_4 =$ Units of product P2 with subcontracted smelting

$X_5 =$ Units of product P3

$$\text{Maximize} \quad z = 0.7X_1 + 0.5X_2 + X_3 + 0.9X_4 + 1.1X_5$$

$$\text{Subject to:} \quad 6X_1 + 10X_3 + 8X_5 \leq 8000 \text{ (Capacity for smelting)}$$

$$6X_1 + 6X_2 + 3X_3 + 3X_4 + 8X_5 \leq 12000 \text{ (Capacity for mechanisation)}$$

$$3X_1 + 3X_2 + 2X_3 + 2X_4 + 2X_5 \leq 10000 \text{ (Capacity for assembly and packaging)}$$

$$X_1, X_2, X_3, X_4, X_5 \geq 0$$