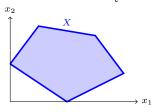
Programowanie matematyczne:

$$\frac{\max}{\min} f(\mathbf{x}) \colon \mathbf{x} \in X$$

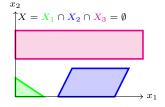
Konwencja zapisu (na podstawie książki $Pi\acute{o}ro\ \mathcal{E}\ Medhi)$:

Zamiast	Piszemy (przeważnie skracając)
$\forall_{i \in I} f(x_i) = y_i$	$f(x_i) = y_i i = 1, \dots, I $
$x_{11} + x_{12} + x_{13} = y_1$	$\sum_{i=1}^{3} x_{1i} = y_1 \text{ lub } \sum_{i=1}^{3} x_{1i} = y_1$
$\begin{cases} x_{11} + x_{12} + x_{13} = y_1 \\ x_{21} + x_{22} + x_{23} = y_2 \end{cases}$	$\sum_{i=1}^{3} x_{ji} = y_j j = 1, 2$

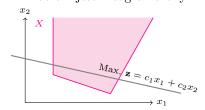
Problem ma rozwiązanie



Problem jest sprzeczny

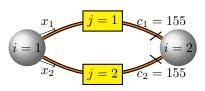


Problem jest nieograniczony



Problem maksymalnego przepływu:

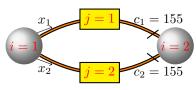
$$\max \sum_{j} x_{j}$$



$$x_j \le c_j \quad j = 1, 2$$

Indeksy

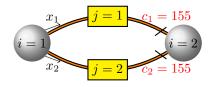




$$x_j \le c_j \quad j = 1, 2$$

Stałe

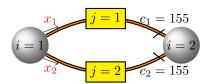
$$\max \sum_{j} x_{j}$$



$$x_j \le c_j \quad j = 1, 2$$

Zmienne

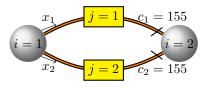
$$\max \sum_{j} x_{j}$$



$$x_j \le c_j \quad j = 1, 2$$

Funkcja celu

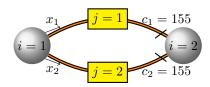
$$\max \sum_{j} x_{j}$$



$$x_j \le c_j \quad j = 1, 2$$

 ${\bf Ograniczenia}$

$$\max \sum_{j} x_{j}$$



$$x_j \le c_j \quad j = 1, 2$$