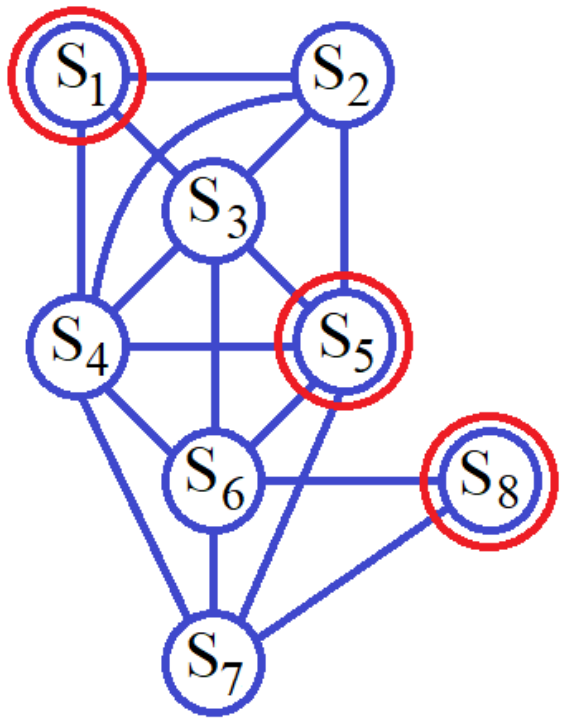
Exemplo de Redução: Set Packing $\leq$ [redacted] Independent Set

Set Packing $\leq$ **Independent Set**

$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

- $S_1 = \{1, 2, 3\}$
- $S_2 = \{1, 2, 3, 4\}$
- $S_3 = \{2, 3, 4, 5\}$
- $S_4 = \{3, 4, 5, 6\}$
- $S_5 = \{4, 5, 6\}$
- $S_6 = \{5, 6, 7, 8\}$
- $S_7 = \{6, 7, 8, 9\}$
- $S_8 = \{7, 8, 9\}$

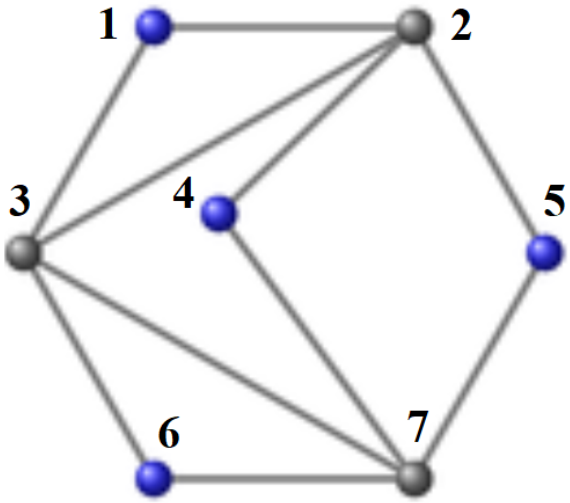
f



[redacted]

Exemplo de Redução: Independent Set $\leq_{\blacksquare}$ Set Packing

Independent Set $\leq_{\bullet}$ **Set Packing**



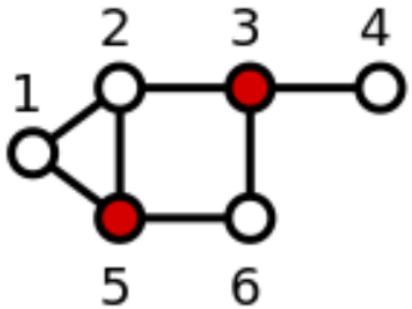
Grafo G (no problema Conj. Independente)

f

$U = \{12, 13, 23, 24, 25, 36, 37, 47, 57, 67\}$

$S_1 = \{12, 13\}$
$S_2 = \{12, 23, 24, 25\}$
$S_3 = \{13, 23, 36, 37\}$
$S_4 = \{24, 47\}$
$S_5 = \{25, 57\}$
$S_6 = \{36, 67\}$
$S_7 = \{37, 47, 57, 67\}$

Exemplo de Redução: Domination $\leq$ [redacted] Set Cover



f

$U = \{1, 2, ..., 6\}$

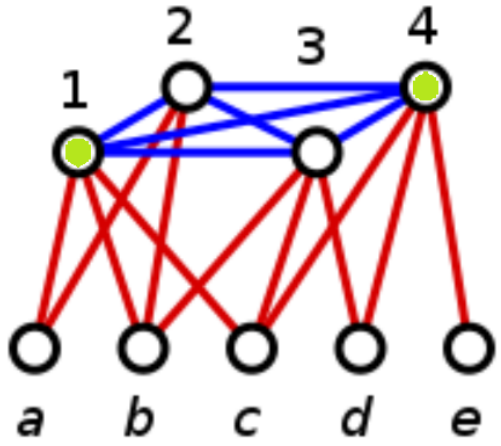
$S_1 = \{1, 2, 5\}$
$S_2 = \{1, 2, 3, 5\}$
$S_3 = \{2, 3, 4, 6\}$
$S_4 = \{3, 4\}$
$S_5 = \{1, 2, 5, 6\}$
$S_6 = \{3, 5, 6\}$

[redacted]

Exemplo de Redução: Set Cover $\leq$ [redacted] Domination

$U = \{a, b, c, d, e\}$

$S_1 = \{a, b, c\}$
$S_2 = \{a, b\}$
$S_3 = \{b, c, d\}$
$S_4 = \{c, d, e\}$



[redacted]

Exemplo de Redução: Set Cover $\leq$ [redacted] Hitting Set

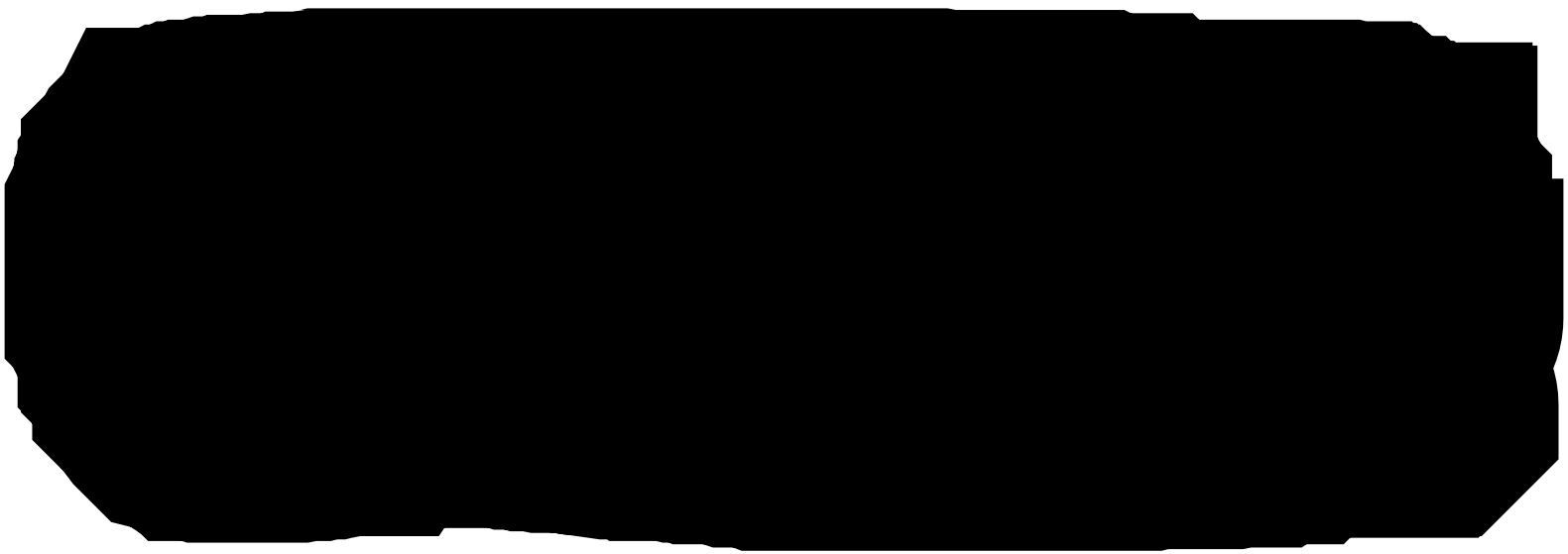
$$U = \{1, 2, 3, 4, 5\}$$

$$\mathcal{S} = \{\{1, 2, 3\}, \{2, 3, 4\}, \{3, 4, 5\}\}$$

$\xrightarrow{\mathbf{f}}$

$$U' = \{a, b, c\}$$

$$\mathcal{S}' = \{\{a\}, \{a, b\}, \{a, b, c\}, \{b, c\}, \{c\}\}$$



Exemplo de Redução: Hitting Set $\leq$ [redacted] Set Cover

$$U = \{a, b, c\}$$

$$\mathcal{S} = \{\{a\}, \{a, b\}, \{a, b, c\}, \{b, c\}, \{c\}\}$$

$\xrightarrow{\mathbf{f}}$

$$U' = \{1, 2, 3, 4, 5\}$$

$$\mathcal{S}' = \{\{1, 2, 3\}, \{2, 3, 4\}, \{3, 4, 5\}\}$$