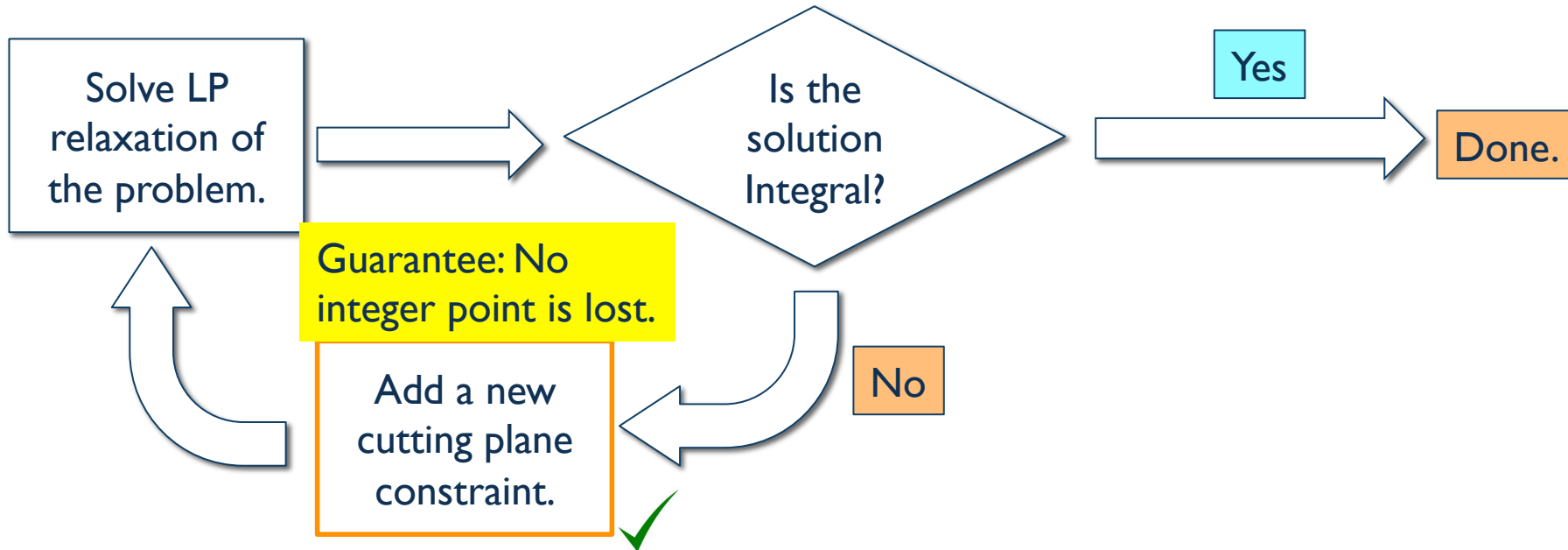


CUTTING PLANE METHOD

Updating the dictionary
Setup for subsequent iterations.

Overall method



Cutting Plane Example

x_1	1.2	$-3.1x_2$	$+4.3x_3$	$-0.5x_5$
x_4	1	$-x_2$	$+x_3$	$-x_5$
x_6	2.5	$+1.3x_2$	$-2.1x_3$	$+x_5$
z	1.7	$-1.2x_2$	$-2.3x_3$	$-2.1x_5$

Cutting Plane:

$$0.1x_2 + 0.7x_3 + 0.5x_5 \geq 0.2$$

Adding cutting plane to dictionary

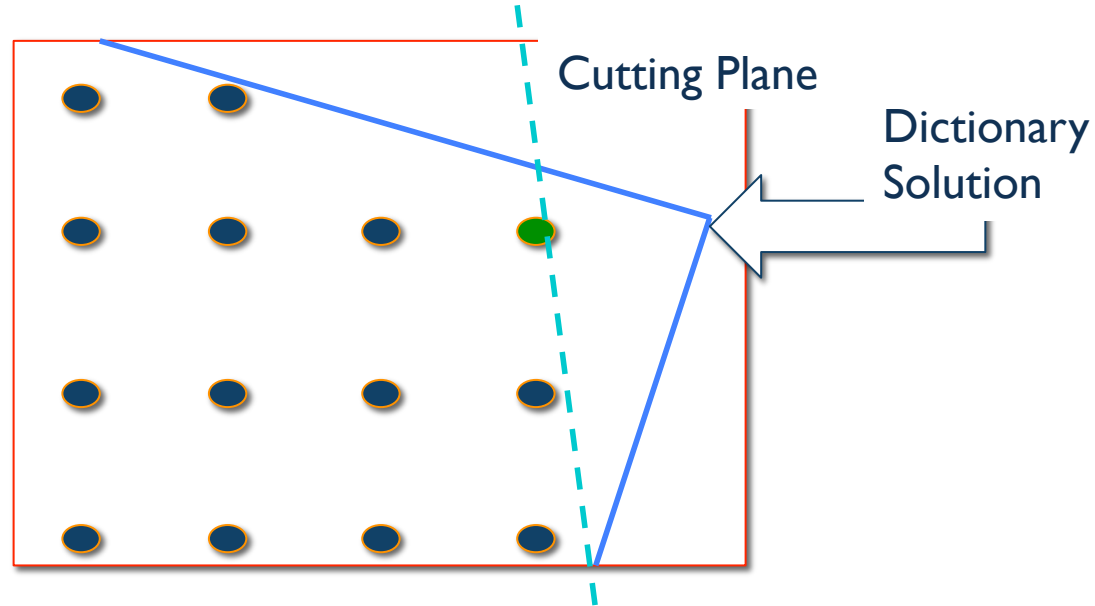
x_1	1.2	$-3.1x_2$	$+4.3x_3$	$-0.5x_5$
x_4	1	$-x_2$	$+x_3$	$-x_5$
x_6	2.5	$+1.3x_2$	$-2.1x_3$	$+x_5$
z	1.7	$-1.2x_2$	$-2.3x_3$	$-2.1x_5$

$$0.1x_2 + 0.7x_3 + 0.5x_5 \geq 0.2$$

x_1	1.2	$-3.1x_2$	$+4.3x_3$	$-0.5x_5$
x_4	1	$-x_2$	$+x_3$	$-x_5$
x_6	2.5	$+1.3x_2$	$-2.1x_3$	$+x_5$
w_1	-0.2	$+0.1x_2$	$+0.7x_3$	$+0.5x_5$
z	1.7	$-1.2x_2$	$-2.3x_3$	$-2.1x_5$

Cutting Plane Method

- Claim: Resulting dictionary after adding cutting plane is primal infeasible.



Cutting Plane: Example

x_1	1.2	$-3.1x_2$	$+4.3x_3$	$-0.5x_5$
x_4	1	$-x_2$	$+x_3$	$-x_5$
x_6	2.5	$+1.3x_2$	$-2.1x_3$	$+x_5$
w_1	-0.2	$+0.1x_2$	$+0.7x_3$	$+0.5x_5$
z	1.7	$-1.2x_2$	$-2.3x_3$	$-2.1x_5$

Dual dictionary
is feasible but
non-final.

Naïve Approach: Re-solve initialization phase Simplex.

Cutting Plane: Solving again after cut.

