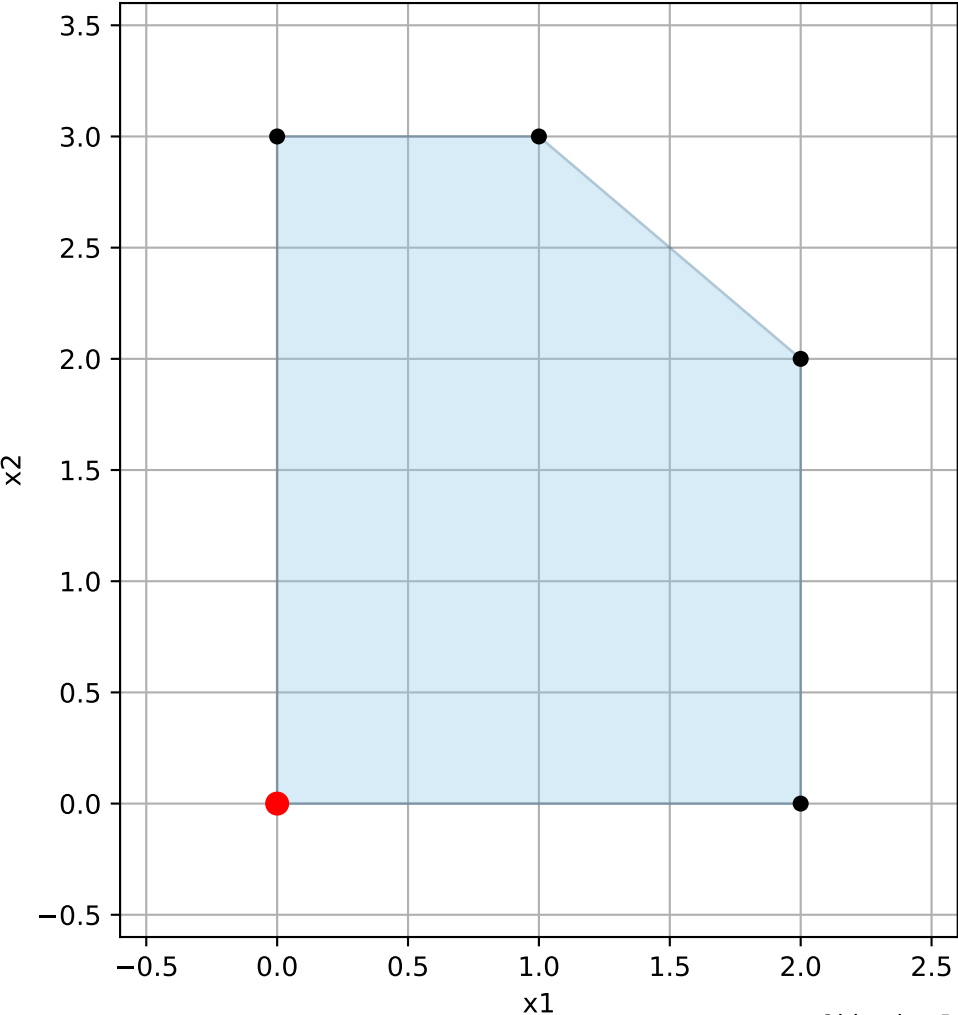


Two-Phase Simplex Report

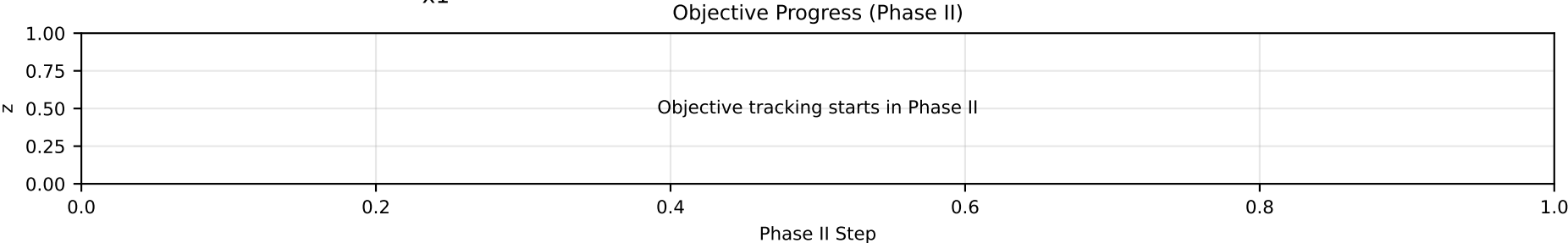
Feasible region + extreme points + simplex path



State 1/5 | PHASE I step 0

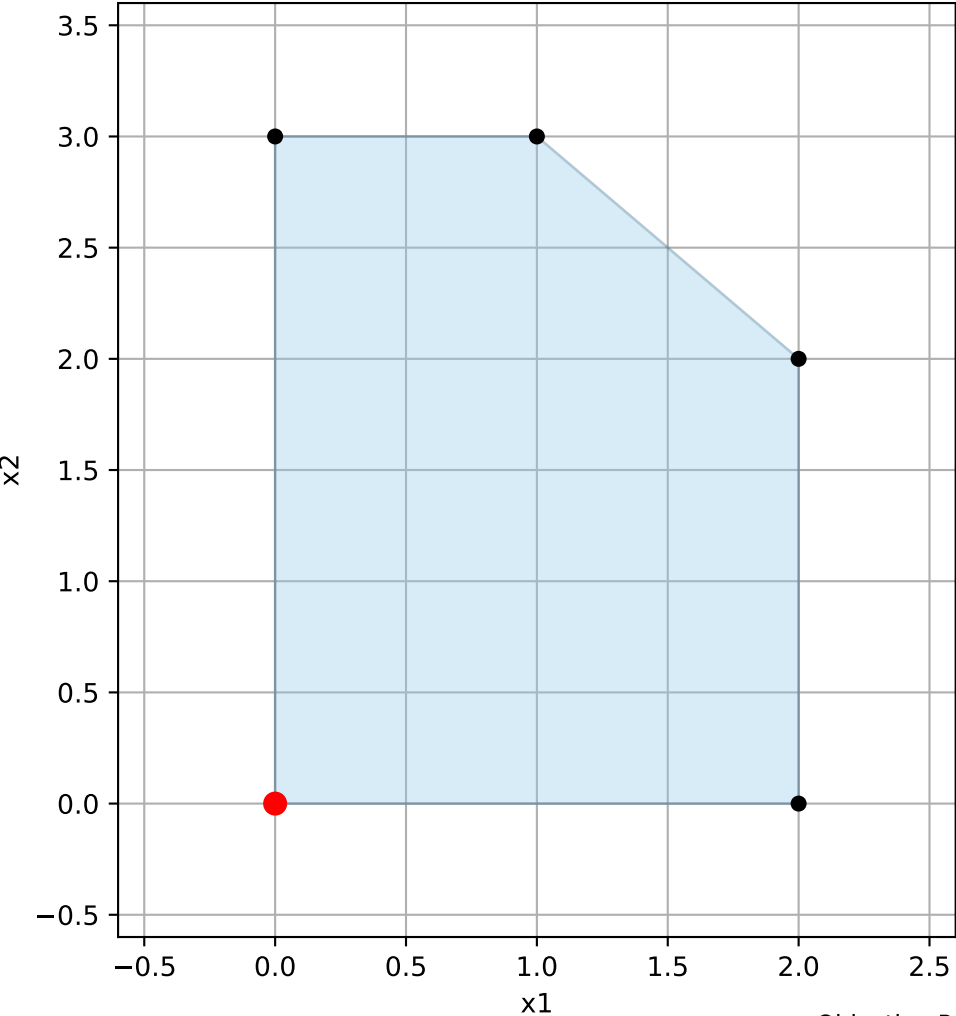
COMMENTS
Teaching Mode | PHASE I
Phase I initialized with artificial objective.

TABLEAU								
row	x1	x2	s1	s2	s3	rhs	ratio	
R1(s1)	1	1	1	0	0	4	inf	
R2(s2)	1	0	0	1	0	2	inf	
R3(s3)	0	1	0	0	1	3	inf	
Rz	0	0	0	0	0	0	-	



Two-Phase Simplex Report

Feasible region + extreme points + simplex path

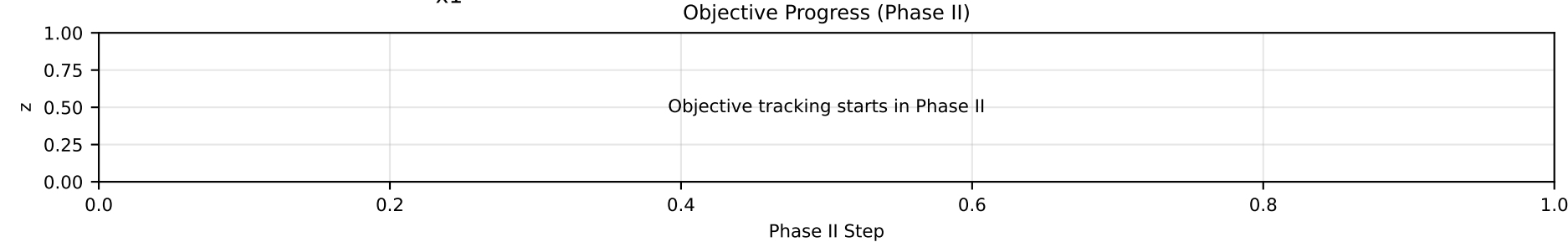


State 2/5 | PHASE I -> PHASE II step 0

COMMENTS
Teaching Mode | Phase Transition
Phase I objective value: 0 (should be 0)
No artificial variable remained basic before cleanup.
Phase I complete. Artificial variables removed before restoring original objective.

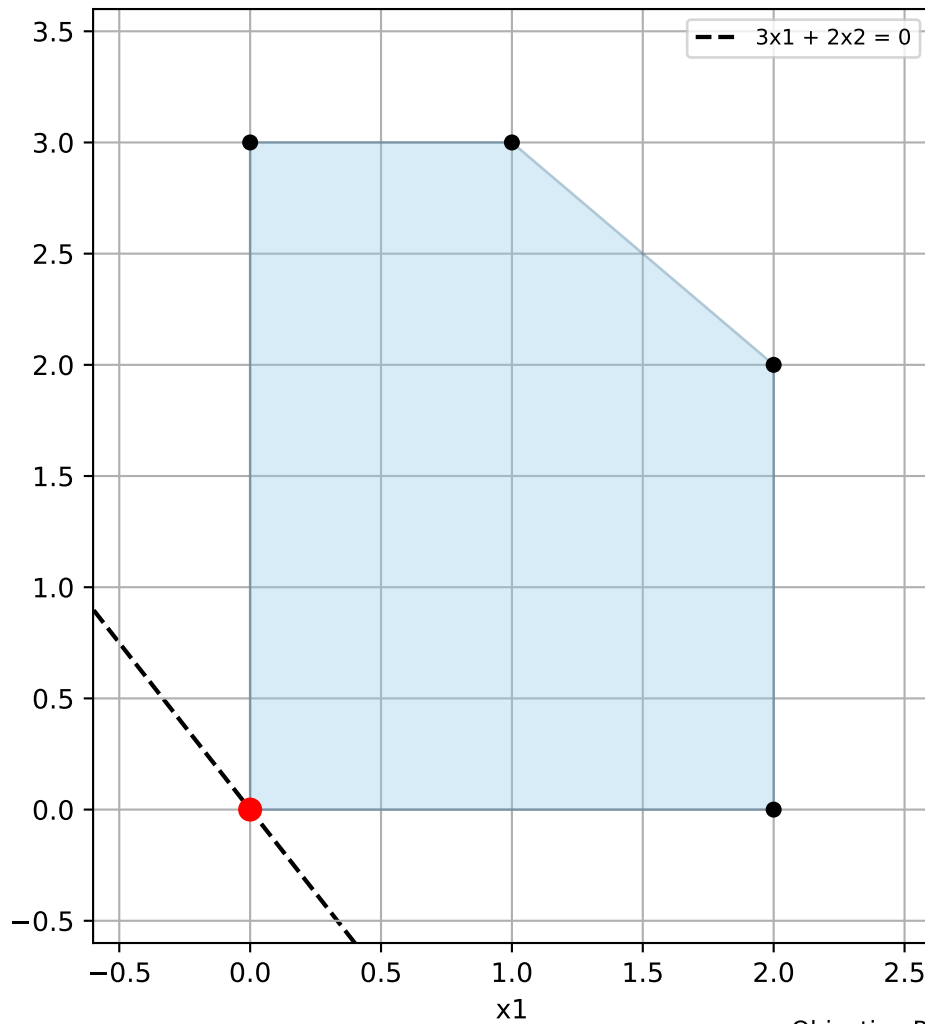
TABLEAU

row	x1	x2	s1	s2	s3	rhs	ratio
R1(s1)	1	1	1	0	0	4	inf
R2(s2)	1	0	0	1	0	2	inf
R3(s3)	0	1	0	0	1	3	inf
Rz	0	0	0	0	0	0	-



Two-Phase Simplex Report

Feasible region + extreme points + simplex path



State 3/5 | PHASE II step 0 | $Z=0$

COMMENTS

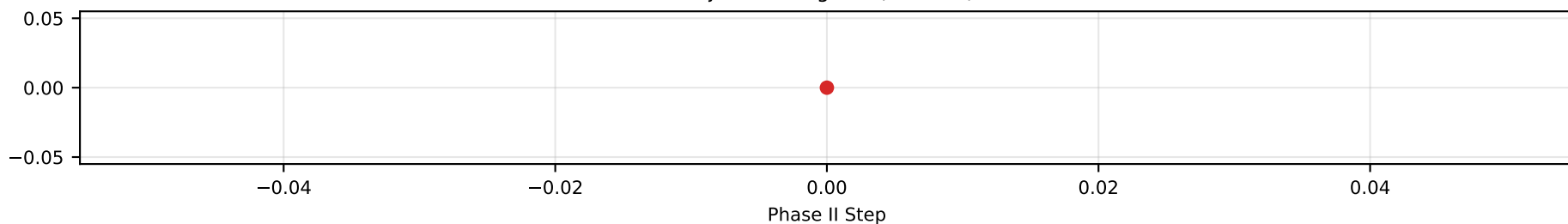
Teaching Mode | PHASE II

Phase II objective restored and made basis-consistent.

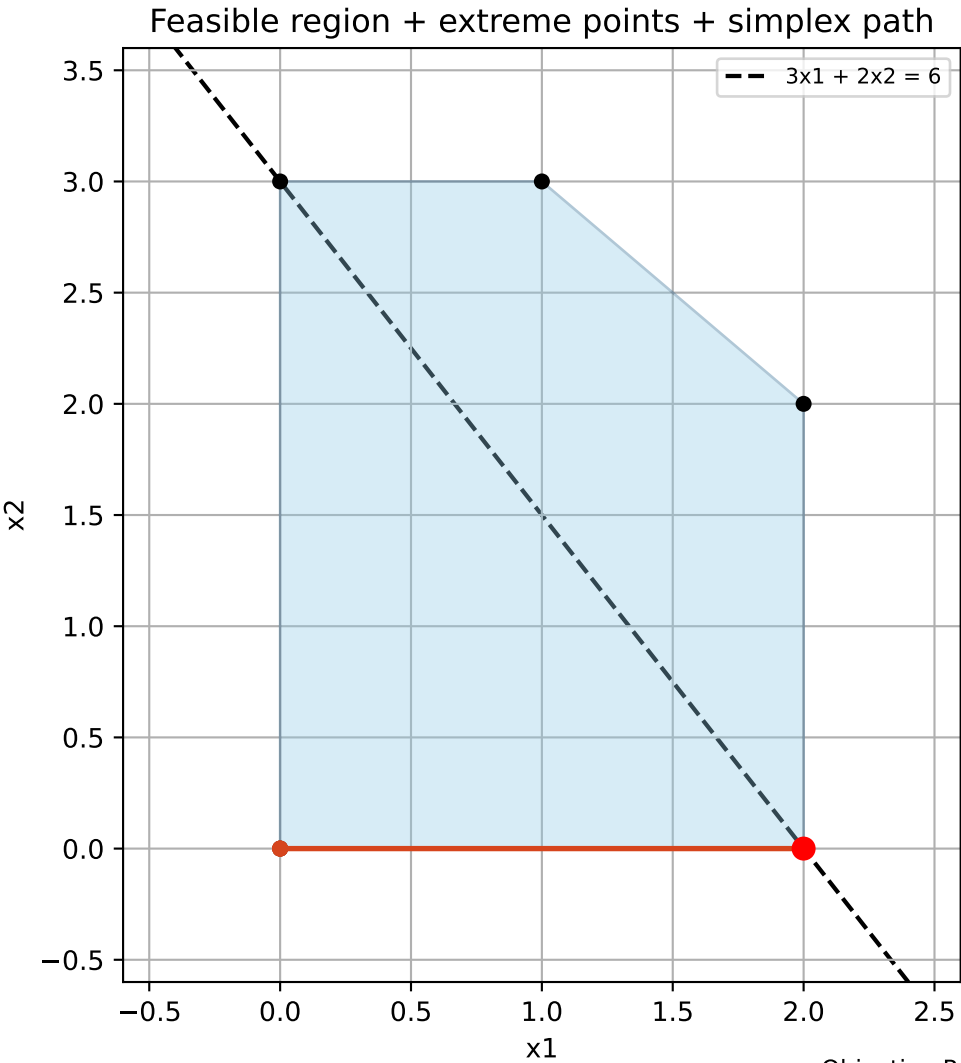
TABLEAU

row	x1	x2	s1	s2	s3	rhs	ratio
R1(s1)	1	1	1	0	0	4	inf
R2(s2)	1	0	0	1	0	2	inf
R3(s3)	0	1	0	0	1	3	inf
Rz	-3	-2	0	0	0	0	-

Objective Progress (Phase II)



Two-Phase Simplex Report



State 4/5 | PHASE II step 1 | ENTER: x_1 | LEAVE: s_2 | $Z=6$

COMMENTS

Teaching Mode | Rule: DANTZIG

Pivot: x_1 enters, s_2 leaves.

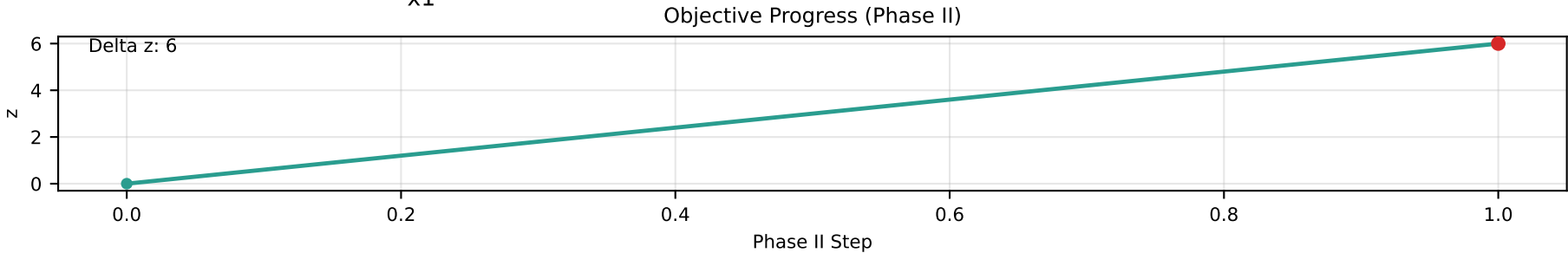
Reduced cost of entering variable: -3

Minimum ratio θ^* : 2

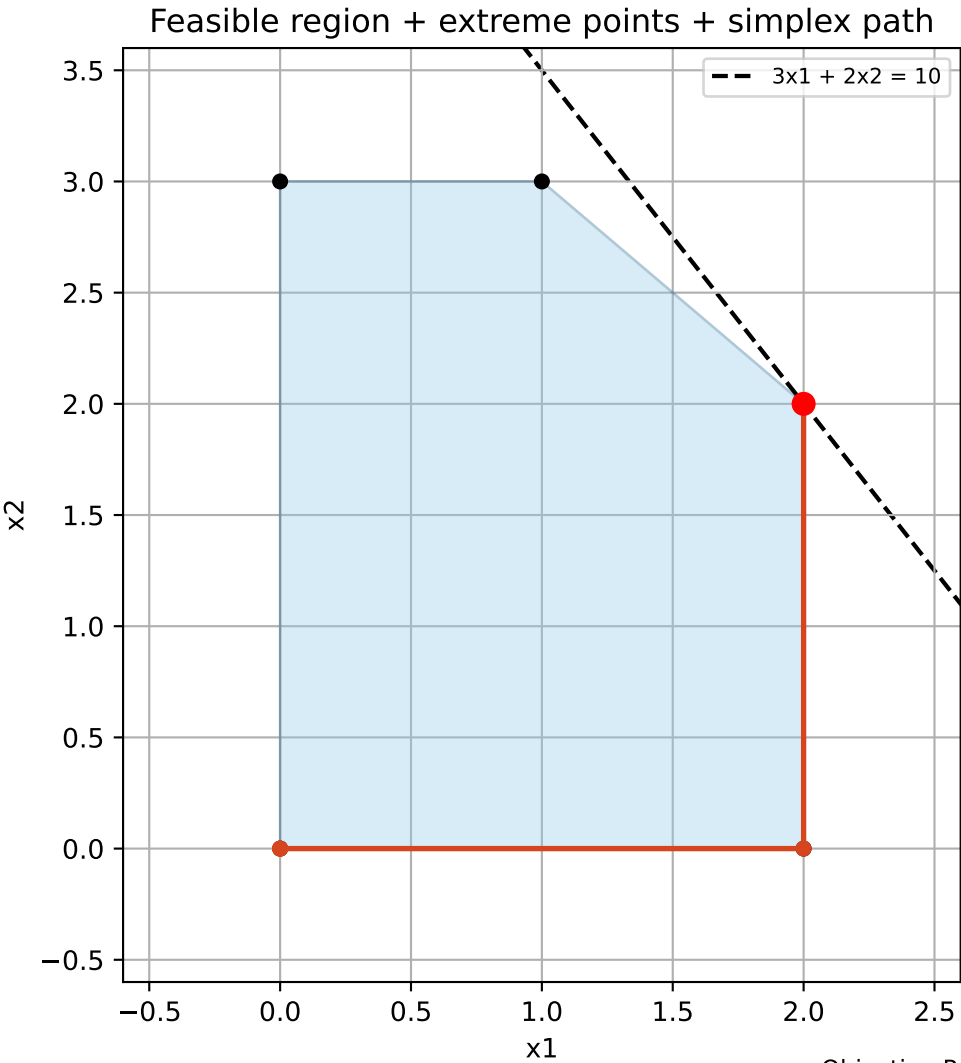
Why this pivot: Dantzig rule: most negative reduced cost (ties by smallest index). Minimum-ratio test (ties by smallest row index).

TABLEAU

row	x_1	x_2	s_1	s_2	s_3	rhs	ratio
R1(s_1)	0	1	1	-1	0	2	4
R2(x_1)	1	0	0	1	0	2	2
R3(s_3)	0	1	0	0	1	3	inf
Rz	0	-2	0	3	0	6	-



Two-Phase Simplex Report



State 5/5 | PHASE II step 2 | ENTER: x_2 | LEAVE: s_1 | $Z=10$

COMMENTS
Teaching Mode | Rule: DANTZIG
Pivot: x_2 enters, s_1 leaves.
Reduced cost of entering variable: -2
Minimum ratio θ^* : 2
Why this pivot: Dantzig rule: most negative reduced cost (ties by smallest index). Minimum-ratio test (ties by smallest row index).

TABLEAU

row	x_1	x_2	s_1	s_2	s_3	rhs	ratio
R1(x_2)	0	1	1	-1	0	2	2
R2(x_1)	1	0	0	1	0	2	inf
R3(s_3)	0	0	-1	1	1	1	3
Rz	0	0	2	1	0	10	-

