Primal problem

$$
\begin{array}{lrcrcrcrcl}
[\min] z = & 3x_1 & + 5x_2 & - 2x_3 & - x_4 & + 0x_5 & + 0x_6 & & \\
\text{s. to} & x_1 & + 2x_2 & + 2x_3 & & + x_5 & & = 10 & \\
& 2x_1 & - x_2 & & + 3x_4 & & + x_6 & = 5 &
\end{array}
$$

with $\mathbf{x} \geq 0$

	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)
1	X1	0	3,0000	0	4,6667	at bound	-1,6667	M
2	X2	0	5,0000	0	6,6667	at bound	-1,6667	M
3	X3	5,0000	-2,0000	-10,0000	0	basic	-M	0
4	X4	1,6667	-1,0000	-1,6667	0	basic	-21,0000	0
5	X5	0	0	0	1,0000	at bound	-1,0000	M
6	X6	0	0	0	0,3333	at bound	-0,3333	M
	Objective	Function	(Min.) =	-11,6667				
	Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
1	C1	10,0000	=	10,0000	0	-1,0000	0	M
2	C2	5,0000	=	5,0000	0	-0,3333	0	M

Dual problem ("asymmetric" dual)

$$
\begin{array}{lrcrcl}
[\max] w = & 10y_1 & + 5y_2 & & \\
\text{s. to} & y_1 & + 2y_2 & \leq 3 & \\
& 2y_1 & - y_2 & \leq 5 & \\
& 2y_1 & & \leq -2 & \\
& & 3y_2 & \leq -1 & \\
& y_1 & & \leq 0 & \\
& & y_2 & \leq 0 &
\end{array}
$$

with $\mathbf{y}$ *free*

	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)
1	C1	-1,0000	10,0000	-10,0000	0	at bound	-M	10,0000
2	C2	-0,3333	5,0000	-1,6667	0	at bound	-M	5,0000
	Objective	Function	(Max.) =	-11,6667	(Note:	Alternate	Solution	Exists!!)
	Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
1	X1	-1,6667	<=	3,0000	4,6667	0	-1,6667	M
2	X2	-1,6667	<=	5,0000	6,6667	0	-1,6667	M
3	X3	2,0000	>=	2,0000	0	-5,0000	0	M
4	X4	1,0000	>=	1,0000	0	-1,6667	0	21,0000
5	X5	-1,0000	<=	0	1,0000	0	-1,0000	M
6	X6	-0,3333	<=	0	0,3333	0	-0,3333	M

To a ***positive*** **shadow price** corresponds an ***active*** **constraint**, and
to a ***non-active*** **constraint** corresponds a ***null*** **shadow price**.

TAVARES, L. Valadares, Rui C. OLIVEIRA, Isabel H. THEMIDO, F, Nunes CORREIA, 1996, p 60