1.- $z = 4a + b$

S.a.

$r1: a + b \leq 150$

$r2: 2a + b \leq 80$

$r3: a \geq 0$

$r4: b \geq 0$

	a	b	
r1, r2	-70	220	x
r1, r3	0	150	x
r1, r4	150	0	x
r2, r3	0	80	✓
r2, r4	40	0	✓
r3, r4	0	0	✓

$z(0, 80) = 80$

$z(40, 0) = 160$ → Máximo

$z(0, 0) = 0$ → Mínimo

2.- $z = x + 3y$

S.a.

$r1: x + y \geq 10$

$r2: 2x + 2y \leq 25$

$r3: x \leq 8$

$r4: x \geq 0$

$r5: y \geq 0$

	X	Y	
r1, r2	/	/	x
r1, r3	8	2	✓
r1, r4	0	10	✓
r1, r5	10	0	x
r2, r3	8	9/2	✓
r2, r4	0	25/2	✓
r2, r5	25/2	0	x
r3, r4	/	/	x
r3, r5	8	0	x
r4, r5	0	0	x

$z(8, 2) = 14$ → Mínimo

$z(0, 10) = 30$

$z(8, 9/2) = 43/2$

$z(0, 25/2) = \frac{75}{2}$ → Máximo

3.- $z = 0.1x + 0.5y$

S.a.

$r1: 4x + 3y \leq 30$

$r2: 6x + y \leq 36$

$r3: x - y \leq 20$

$r4: x \geq 0$

$r5: y \geq 0$

	X	Y	
r1, r2	39/7	18/7	✓
r1, r3	90/7	-50/7	x
r1, r4	0	10	✓
r1, r5	15/2	0	x
r2, r3	8	-12	x
r2, r4	0	36	x
r2, r5	6	0	✓
r3, r4	0	-20	x
r3, r5	20	0	x
r4, r5	0	0	✓

$z(39/7, 18/7) = \frac{129}{70}$

$z(0, 10) = 5$ → Máximo

$z(6, 0) = 0.6$

$z(0, 0) = 0$ → Mínimo

4: $z = m + 2n$

S.a

$r1: 3m + n \leq 14$
$r2: m + 5n \leq 20$
$r3: m \leq n - 10$
$r4: m \geq 0$
$r5: n \geq 0$

	m	n	
r1, r2	25/7	23/7	X
r1, r3	1	11	X
r1, r4	0	14	X
r1, r5	14/3	0	X
r2, r3	-5	5	X
r2, r4	0	4	X
r2, r5	20	0	X
r3, r4	0	-10	X
r3, r5	-10	0	X
r4, r5	0	0	X

No existe

5: $z = 4x + 3y$

S.a

$r1: 3x + 2y \leq 25$
$r2: x \leq 5$
$r3: 8x \leq 21 - 6y$
$r4: x \geq -2$
$r5: y \geq 1$

	x	y	
r1, r2	5	5	X
r1, r3	54	$-\frac{137}{2}$	X
r1, r4	-2	31/2	X
r1, r5	23/3	1	X
r2, r3	5	-19/6	X
r2, r4	/	/	X
r2, r5	5	1	X
r3, r4	-2	37/6	✓
r3, r5	15/8	1	✓
r4, r5	-2	1	✓

$z(-2, \frac{37}{6}) = \frac{21}{2}$ → Máximo

$z(\frac{15}{8}, 1) = \frac{21}{2}$

$z(-2, 1) = -5$ → Mínimo