hal 41

1. $4x_1 + 5x_2 = 20$ | 2 | $8x_1 + 10x_2 = 40$
$2x_1 + 6x_2 = 20$ | 4 | $8x_1 + 24x_2 = 80$ −

$-14x_2 = -40$

$x_2 = \frac{40}{14}$

$x_2 = 2,85$

$2x_1 + 6x_2 = 20$

$2x_1 + 6(2,85) = 20$

$x_1 + 17,1 = 20$

$2x_1 = 20 - 17,1$

$2x_1 = 2,9$

$x_1 = \frac{2,9}{2}$

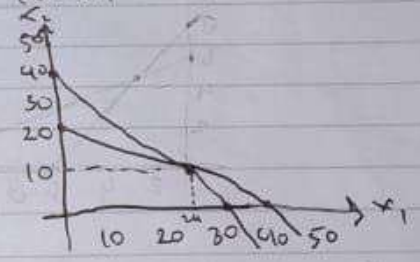
$x_1 = 1,45$

$x_1 + 2x_2 = 40$

(40, 20)

$4x_1 + 3x_2 = 120$

(30, 40)



2.

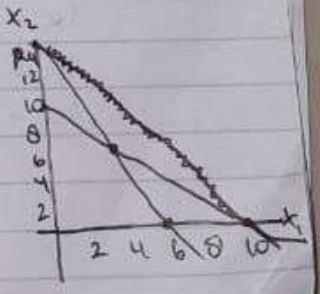
	P.P I	P.P II	Laba
I	10	7	6
II	10	3	4
	100	42	

a) Formulasi model

$Z = 6x_1 + 4x_2$

Batasan $10x_1 + 10x_2 = 100$ (10, 10)

$7x_1 + 3x_2 = 42$ (6, 14)



3.

	Var A	Var B	harga
I	8	1	0,05
II	6	2	0,03
	48	12	

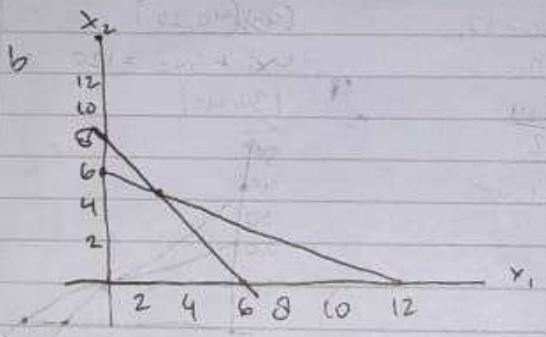
a. Formulasi model

$z = 0{,}05x_1 + 0{,}03x_2$

Batasan = $8x_1 + 6x_2 = 48$ (6, 8)

$1x_1 + 2x_2 = 12$ (12, 6)

b



4. $z = 0{,}05x_1 + 0{,}06x_2$

Batasan = $8x_1 + 6x_2 = 48$ | 2

$1x_1 + 2x_2 = 12$ | 16

$16x_1 + 12x_2 = 96$

$16x_1 + 32x_2 = 192$ −

$-20x_2 = -96$

$x_2 = \frac{96}{20}$

$x_2 = 4{,}8$

$1x_1 + 6x_2 = 12$

$1x_1 + 6(4{,}8) = 12$

$1x_1 + 28{,}8 = 12$

$1x_1 = 12 - 28{,}8$

$1x_1 = -16{,}8$

$x_1 = \frac{-16{,}8}{1} = -16{,}8$

$z = 0{,}05(-16{,}8) + 0{,}06(4{,}8)$

$= -0{,}84 + 0{,}2988$

$= -0{,}5512$

5.

6

4 5 6 x_1

5. $Z = 3x_1 + 5x_2$

Batasan $= 10x_1 + 2x_2 = 20$

$6x_1 + 6x_2 = 36$

$x_2 = 2$

6.

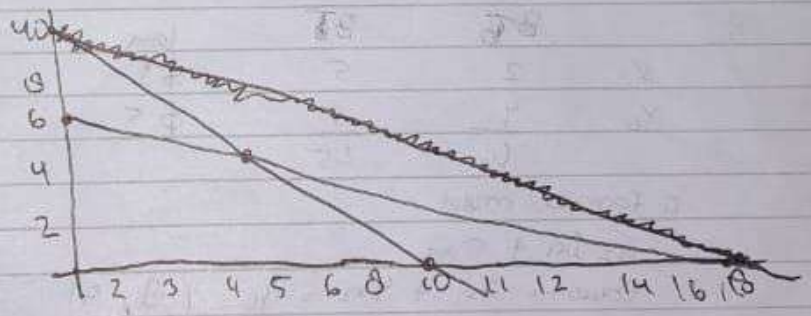
	DB	Jk	laba
x_1	2	8	400
x_2	6	10	100
	36	80	

a. formulasi model

$Z = 400x_1 + 100x_2$

Batasan $2x_1 + 6x_2 = 36$ (18, 6)

$8x_1 + 10x_2 = 80$ (10, 40)



(8)

7. $8x_1 + 10x_2 = 80 \mid 2 \mid 16x_1 + 20x_2 = 160$
$2x_1 + 8x_2 = 36 \mid 8 \mid 16x_1 + 48x_2 = 288$

$-28x_2 = -128$

$x_2 = \frac{-128}{-28}$

$x_2 = 4,57$

$8x_1 + 10x_2 = 80$
$8x_1 + 10(4,57) = 80$
$8x_1 + 45,7 = 80$
$8x_1 = 80 - 45,7$
$x_1 = \frac{34,3}{8}$
$x_1 = 4,28$

$Z = 400(4,28) + 100(4,57)$
$= 1712 + 457$
$= 2.169$

$Z_0 = 400(4,28) + 500(4,57)$
$= 1712 + 2285$
$= 3997$

8.

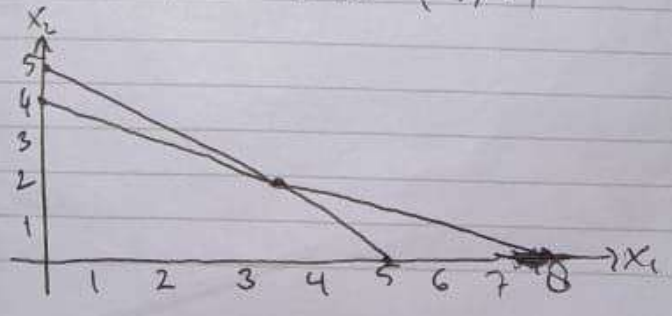
	BE	BT	Laba
x_1	2	5	$1
x_2	4	5	$5
	16	25	

a. formulasi model

$Z = 1x_1 + 5x_2$

Batasan $= 2x_1 + 4x_2 = 16$ (8, 4)

$5x_1 + 5x_2 = 25$ (5, 5)



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9. $Z = 3x_1 + 6x_2$

$3x_1 + 2x_2 \leq 18$

$3(2) + 2x_2 = 18$

$6 + 2x_2 = 18$

$2x_2 = 18 - 6$

$2x_2 = 12$

$x_2 = \frac{12}{2}$

$= 6$

$Z = 3x_1 + 6x_2$

$= 3(2) + 6(6)$

$= 6 + 36$

$= 42$

$x_1 + x_2 \leq 5$

$2 + 6 \leq 5$

10.

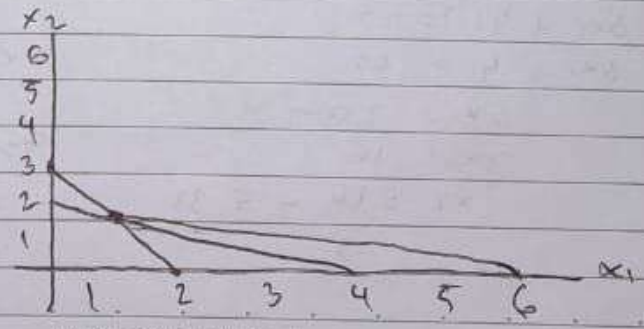
	Antibiotik I	Antibiotik II	Antibiotik III	harga
x_1	3	1	2	80
x_2	2	2	6	50
	6	4	12	

a. $80x_1 + 50x_2$

$3x_1 + 2x_2 = 6$ (2, 3)

$1x_1 + 2x_2 = 4$ (4, 2)

$2x_1 + 6x_2 = 12$ (6, 2)



11.

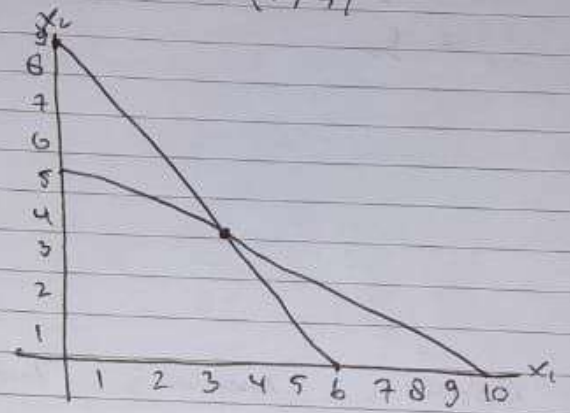
	BE	BP	laba
x_1	3	2	300
x_2	2	4	400
	18	20	

$Z = 300x_1 + 400x_2$

Batasan

$3x_1 + 2x_2 = 18$ (6, 9)

$2x_1 + 4x_2 = 20$ (10, 5)



12. $Z = 300x_1 + 600x_2$

$3x_1 + 2x_2 = 18$ | 1 | $3x_1 + 2x_2 = 18$

$3x_1 + 4x_2 = 20$ | 1 | $3x_1 + 4x_2 = 20$ −

$-2x_2 = -2$

$x_2 = \frac{2}{2}$

$x_2 = 1$

$3x_1 + 4x_2 = 20$

$3x_1 + 4(1) = 20$

$3x_1 + 4 = 20$

$3x_1 = 20 - 4$

$3x_1 = 16$

$x_1 = \frac{16}{3} = 5,33$

$Z = 300(5,33) + 600(1)$

$= 1.599 + 600$

$= 2.199$

No.
Date

14. $3x_1 + 5x_2 = 150$ | ×4 | $12x_1 + 20x_2 = 600$
$10x_1 + 4x_2 = 240$ | ×5 | $50x_1 + 20x_2 = 1200$ −
$-38x_1 = -600$

$-38x_1 = -600$

$x_1 = \frac{-600}{-38} = 15,78$

$3x_1 + 5x_2 = 150$
$3(15,78) + 5x_2 = 150$
$47,34 + 5x_2 = 150$
$5x_2 = 150 - 47,34$
$5x_2 = 102,66$
$x_2 = \frac{102,66}{5}$
$= 20,532$

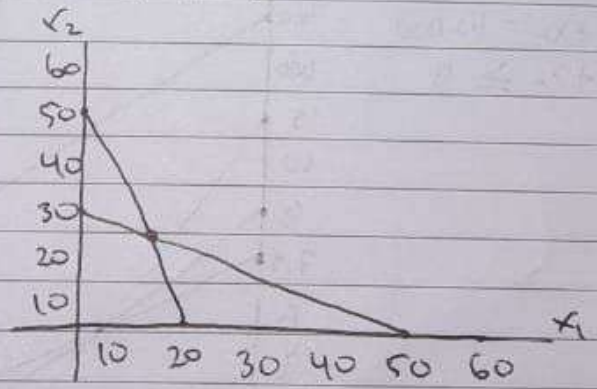
$Z = 50x_1 + 40x_2$
$= 50(15,78) + 40(20,532)$
$= 789 + 821,28$
$= 1.610,28$

13.

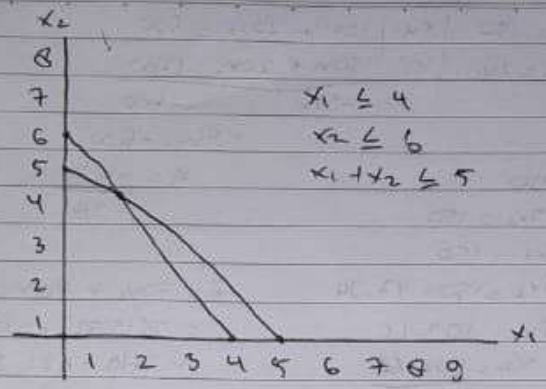
	Pk	Jk	Iuran
x_1	3	10	50
x_2	5	4	40
	150	200	

$Z = 50x_1 + 40x_2$

$3x_1 + 5x_2 = 150$ (50, 30)
$10x_1 + 4x_2 = 200$ (20, 50)



15.



$x_1 \leq 4$

$x_2 \leq 6$

$x_1 + x_2 \leq 5$

16.

	P. Pen	P. Pel	laba
x_1	2	4	800
x_2	4	2	900
	30	30	

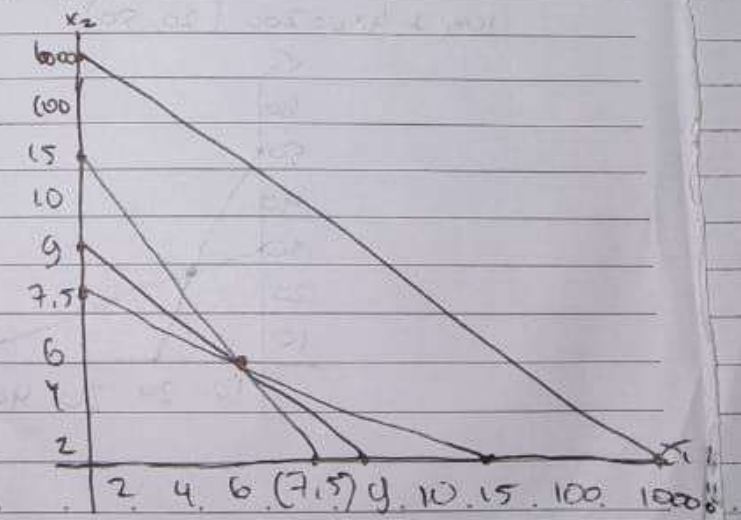
$z = 800x_1 + 900x_2$

$2x_1 + 4x_2 = 30$ (15, 75)

$4x_1 + 2x_2 = 30$ ((7.5, 15)

$x_1 + x_2 = 10.000$

$x_1 + x_2 \geq 9$



17.

	J. Der	J. Pen	Utilidad
x_1	4	12	30
x_2	10	8	70
	80	112	

$Z = 30x_1 + 70x_2$

$4x_1 + 10x_2 = 80$ (20, 8)

$12x_1 + 8x_2 = 112$ ((9.33), 14)