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	X.	Y	Availabil	Hy
Turning	01,-1,	6 ., .	2500	
Milling		, 10	2000	
finishing	V LY	2	500	4)
Income	23	32		

primal is

Maximize
$$Z = 23x + 32y$$

subject to $10x + 6y \le 2500$
 $5x + 10y \le 2000$

1x+2y < 500

	×	Y	Availability
Turning	10	6	2500
milling	5	10	2000
Linishing	1	2	500

Income 23 32

primal is

Maximize Z = 23x + 32 y

subject to 10x + 6y = 2500 5x + 10y < 2000

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· Pual is

Since there are 3 constraints in primal we will have 3 Variables in dual let variables be y_1, y_2, y_3

Minimize Z = 2500 y, + 2000 y2 + 500 y3
subject to

$$10y_1 + 5y_2 + y_3 \ge 23$$

 $6y_1 + 10y_2 + 2y_3 \ge 32$

Hence Dual is formed

(10)

11.

Minimize

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c= 21 x, + 50x2 1 priding.

subject to =2x, +5x, 212

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realized to see

3×1+7×2>=17 is larger

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Dual of given problem is

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Since there 2 constraints Y, , Y, be variables

12.

The doinfulation of the custom molding example including the new activity of producing champagne glasses is straight forward, we have exactly the same capacity limitation hour of production capacity, which feet of ware house capacity, and limit on six-ounce juice glass demand - and one additional variable for production of champagne glasses let $z_1 = No.06$ cases of six-ounce juice glasses in hundreds

n hundreds

No of cases of champagne glasses in hundreds.

Formulation

Maximize $z = 5x_1 + 4.5x_2 + 63$ $6x_1 + 5x_2 + 8x_3 \le 60$ $10x_1 + 20x_2 + 10x_3 \le 150$ $x_1 \le 8$

After introducing slack variable

 $6x_{1} + 5x_{2} + 8x_{3} + 24 = 60$ $10x_{1} + 20x_{2} + 10x_{3} + 25 = 150$ $x_{1} + x_{6} = 8$ $5x_{1} + 4.5x_{2} + 6x_{3} - 2 = 0$

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