Nadia Dansani
Assignment 2
Akpan 64018
9/18/2022
1.

a.

A = Number of collegiate backpacks made

B = Number of mini backpacks

C = function to determine maximum profit

b. Objective Function

32a+24b=c

c. Constraints

Number of collegiate backpacks available for sale<= 1000

Number of mini backpacks available for sale<=1200

Material needed for collegiate backpack =3

Material needed for mini backpack =2

Total material available each week <= 5000

How fast workers can complete each bag

It takes 45 minutes to make a collegiate bag

It takes 40 minutes to make a mini backpack

After converting them to part of an hour and multiplying the amount of laborers, and the hours they are available the function below shows the amount of time the bags cannot exceed in production.

.75A+.66B<=1400

3a+2B<=5000

d.

Maximize 32A+24B

A+B<=1000

A+B<=1200

.75a+.66b<=1400

3a+2b<=5000

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2.

a.

A_1= Large product at Plant A

A_2=Medium product at Plant A

A_3= Small product at Plant A

B_1= Large product at Plant B

B_2=Medium product at Plant B

B_3= Small Product at Plant B

C_1= Large Product at Plant C

C_2 = Medium Product at Plant C

C_3= Small Product at Plant C

b. $420A_1+360A_2+300A_3+420B_1+360B_2+300B_3+420C_1+360C_2+300C_3$ =Maximize profit