Task 1:

1. The objective function is a linear function. The function aim is to find the function variables that find the min / max value of the function value.
In this specific case, we want to find the maximus value of the function that will represent the most profit.

In this case, the equation we want to maximize is: p*75 + j*60

2. The decision variables are variables that the objective function gets. It is the variables that in our power to change and decide about and affectively they are the solution of the problem.
In this case it is: p = # of pants, j = # of jackets to be made.

3. The constrains are the limitations that we have. This is a set of rules that makes the answer to fit the “real world” so it will not tell me of example to make half a jacket, it cannot be negative amount of making pants and more, worker cannot work more than 14 h a day and more.

The constrains are:
p >= 0
j>=0 //for positive number of jackets and pants.
p*1.5 + j*2.25 <= 1125 // each pants need 1.5 $m^2$of cotton, each jacket needs 2.25 m^2 of it. We
// only have 1125m^2
p*3 + j*1.5 <= 1500 // each pants need 3 m^2 of polyester, each jacket needs 1.5 m^2 of it. We
// only have 1500m^2

TASK 2:

$$\max() = p \times 75 + j \times 60$$

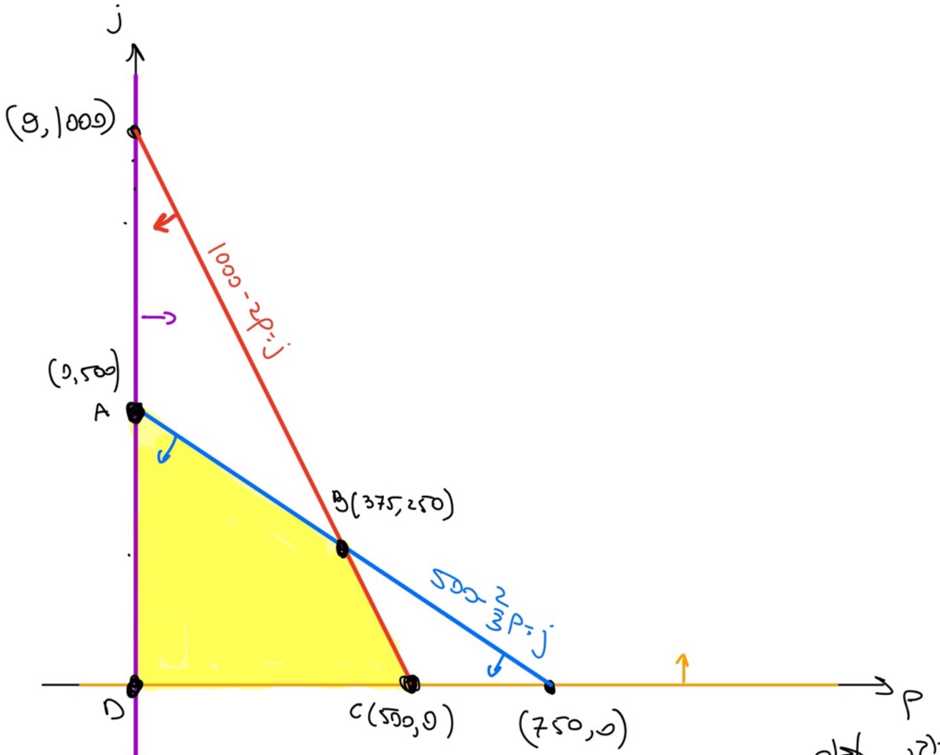
<u>constrains:</u>

$p \geq 0$

$j \geq 0$

$1.5p + 2.25j \leq 1125 \Rightarrow 1.5p + 2.25j = 1125 = (0,500),(750,0)$

$3p + 1.5j \leq 1500 \qquad 3p + 1.5j = 1500 = (0,1000),(500,0)$



$D \to 0.$

$A \to 75p + 60j = 0 + 60 \cdot 500 = 30k$

$B \Rightarrow 75p + 60j = 75 \cdot 375 + 60 \cdot 250 = 43,125$

$C \Rightarrow 75p + 60j = 75 \cdot 500 + 60 \cdot 0 = 37,500$

נבדוק: עבור

לכן B זו הנקודה שאמור לתת את התוצאה הטובה ביותר ולכן נייצר 375 מכנסיים ו250 ג'קטים.