1. A factory produces two types of fabric using 3 different colors of wool. For each meter of fabric, the following amounts of wool (in grams) are required:

Wool	Fabric A	Fabric B
yellow	400	500
green	500	200
black	300	800

The factory only has 100 kg of yellow wool, 100 kg of green wool and 120 kg of black wool. The manager of this factory wants to determine how to establish production, assuming they make 500\$00/m in fabric A and 200\$00/m in fabric B.

Formulate this linear optimization problem and solve it using AMPL.

Preparation for this class

- optimization software: we'll be using AMPL (https://ampl.com)
 - commercial, but freely usable for teaching + community edition
 - version for this course available at https://www.dcc.fc.up.pt/~jpp/AMPL/
 - the AMPL book is freely available in https://ampl.com/learn/ampl-book/
 - take a look at the examples in https://ampl.com/learn/ampl-book/example-files/
- install Python 3
- install AMPL + amplpy
- see one or two examples with AMPL + Python:
 - https://github.com/ampl/amplpy
 - you may get help from chatGPT; see, e.g.: https://colab.research.google.com/github/ ampl/amplcolab/blob/master/authors/fdabrandao/chatgpt/christmas.ipynb