Operations Research

Homework 1

Due in class Tuesday, September 12, 2017

1. Minimize

$$z = 8\,x + 12\,y$$

subject to

$$\begin{gathered} 5\,x + 2\,y \geq 20\,, \\ 4\,x + 3\,y \geq 24\,, \\ y \geq 2\,, \\ x, y \geq 0\,. \end{gathered}$$

2. A sum of \$12 000 is to be invested. At least half the amount will go into an investment earning 6% annual interest, but involving some risk. Thus, the amount in the risky investment may not be more than three times the amount in a second, relatively riskless investment earning 5% annual interest. How much should be invested into each in order to maximize interest?