Drunken Husband (math01)

—- Run LPL Code , HTML Document –

Problem: Eva recently discovered a shelf full of bottles of wine in the cellar. She counted 24 bottles of Rioja and 17 bottles of Malbec. She also noticed the price labels on the bottles: The price of one bottle of Rioja was \$25 and one bottle of Malbec costs \$49. Suddenly, she realized that her husband had spent \$2000 a week ago for just this wine. How many bottles did the husband already drink? (Let x and y be the number of bottles of Rioja and Malbec bought by the husband.)

Questions

1. Verify that there is no solution with $x \leq 30$ by modifying the model.
2. Verify that $(x, y) = (31, 25)$ and $(x, y) = (80, 0)$ are the only two solutions for this problem using the model, supposing the husband spends all the money.
3. Suppose, the husband can spend at most \$333 and he likes to buy an equal numbers of bottles of Rioja and Malbec. How many bottles of each kind can he buy now?
4. Suppose the husband wants to buy as many bottles as he can for \$997. How many can he buy of each type? Guess the solution first before solving the problem!

References

[1] MatMod. Homepage for Learning Mathematical Modeling : https://matmod.ch.