

BUDGET CONSTRAINT - ADDITIONAL PROBLEM (JUST FOR FUN!☺)

Problem #1

There exists an archipelago of five islands. Four goods are produced on each of these islands: w, x, y, z . The currency is the same on all of the islands and it is shells. Trade between these islands is prohibited. Assume you are a smuggler. You possess 100 shells and during a single season you can make five trips between islands. Knowing prices of goods produced on the islands and the transportation costs between islands (in brackets), plan your journey so as to maximize your wealth by buying and selling goods produced on these islands. The choice of the starting and finishing point of your journey is up to you.

Interpretation of the diagram given below: The arrows indicate the possible directions of the trips. In brackets you are given the transportation costs (payable before the trip). On each island there are different prices expressed in shells, e.g. for Island A the price ratios are expressed by the budget constraint taking the form: $10w + 3x + 8y + 6z = M$. This formula signifies that on Island A good w costs 10 shells, good x costs 3 shells, *etc.*

Your wealth after 5 trips =shells

Present an overview of your journey (with reasoning).

