**Problem Set 2 (Inefficiency of Local Food)**

Ida is a farmer in Idaho, and Mo is a farmer in Missouri. Suppose that both Ida and Mo have small farms with 40 acres to plant corn and potatoes.

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| --- | --- | --- |
| Yield per Acre | | |
|  | Corn (All Purpose) | Potatoes (All Varieties) |
| Idaho | 201cwt | 437cwt |
| Missouri | 157cwt | 272cwt |
| Figures are **average hundredweight (cwt) per acre** between 2016-2018.  Source: [USDA Crop Production 2018 Summary](https://www.nass.usda.gov/Publications/Todays_Reports/reports/cropan19.pdf) | | |

1. Given the average yields in the table above, who has the absolute advantage in growing corn? What about potatoes?

*Idaho has a competitive edge in corn production since his average per acre is greater than Missouri's.*

*Idaho has an edge when it comes to cultivating potatoes since the yield of Idaho farms exceeds that of Missouri farms.*

1. In order to support localized agriculture, suppose Ida and Mo both plant half their land (20 acres) with corn and half (20 acres) with potatoes. How much of each crop will they produce?

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| --- | --- | --- | --- |
|  | *Ida* | *Mo* | *Total* |
| *Corn* | *101cwt* | *78.5cwt* | *179.5cwt* |
| *Potatoes* | *218.5cwt* | *136cwet* | *354.5cwt* |

1. If Ida and Mo decided to specialize according to comparative advantage, what crop would each produce?

*Ida will produce potatoes while Mo will produce corn*

1. Suppose that Mo decides to produce corn exclusively and buy potatoes from Ida instead of planting them himself. How much corn will he produce?

*157 \* 40 = 6280*

1. How many acres will Ida need to plant with corn to in order to maintain the same level of total production of corn in part 2?

*(179.5\*40)/201 = 35.72139 acres*

1. How many potatoes will Ida be able to produce on her remaining land?

*40 - 35.72139 = 4.278607*

*(4.278607 \* 437 ) / 40*

*46.7437cwt*

1. Plot the Production Possibilities Frontier for Ida and Mo. Then plot the joint production possibility frontier. (You might want to use a graph paper.)



