

**Problem 1**

For this exercise, we will use a global poverty line of \$2/day (PPP).

Below are statistics on the number of persons living on less than \$2 a day in Malawi in 2010 from the World Bank's [PovcalNet database](#).

**Table: Malawi Population by Daily Income (PPP), 2010**

Daily Income	Between 0 and 50 cents	Between 50 cents and 1 dollar	Between 1 and 1.5 dollars	Between 1.5 and 2 Dollars	Total Population of Country
Millions of Persons	1.25	4.25	3.5	2	15

Using that data answer the following questions.

1.1) What is the Poverty Headcount Ratio in percent?

1.2) What is the average income for persons below the poverty line? When computing average income within each bin, use the midpoint of the income range.

1.3) What is the Average Poverty Gap in percent? [Hint:  $APG = H \times ((z - yq)/z)$ ]

**Problem 2.** Below is data from the [US Census Bureau's Current Population Survey \(CPS\)](#) on household income and inequality in 2014. Income numbers are in USD.

**Table: Income and Inequality in the United States, 2014**

	First Quintile	Second Quintile	Third Quintile	Fourth Quintile	Fifth Quintile
Income Range	Below 21,000	21,000–41,000	41,000–68,000	68,000–112,000	Above 112,000
Share of Aggregate Income (%)	3	8	14	23	52

Using the numbers in the income table answer the following questions.

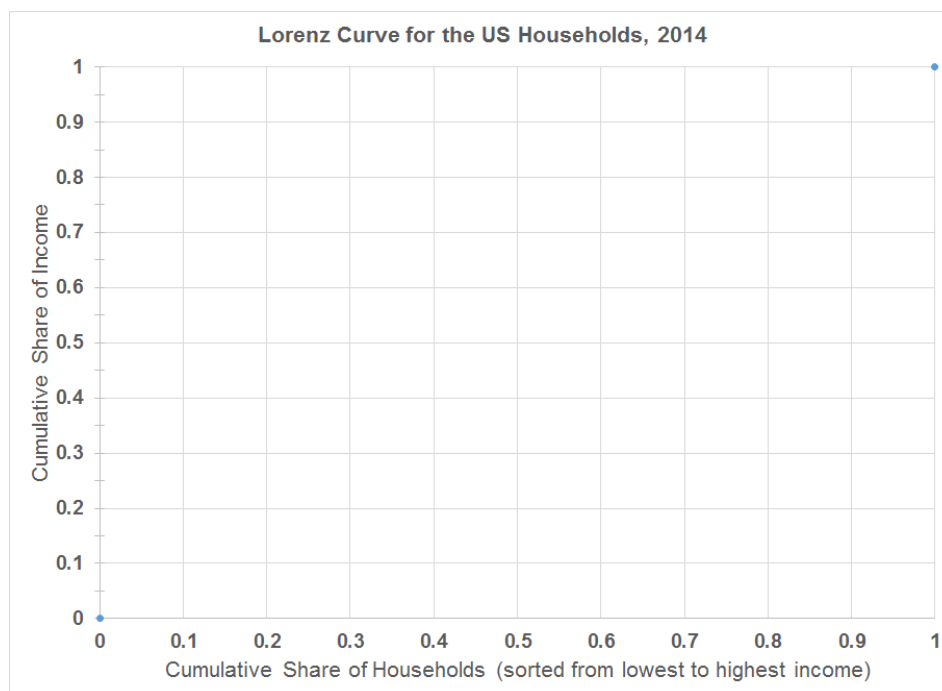
2.1) What is the 80/20 income ratio (income of the household in the 80<sup>th</sup> percentile relative to income of the household in the 20<sup>th</sup> percentile)?

2.2) What is the ratio of the average income of the top quintile relative to the average income of the bottom quintile? What do the differences in these numbers indicate?

2.3) Fill in the following table for Cumulative share of Aggregate Income (as a fraction)

	First Quintile	Second Quintile	Third Quintile	Fourth Quintile	Fifth Quintile
Cuml Share of Agg Income					

Using those numbers, draw the Lorenz Curve for the United States.



The area under the Lorenz curve is approximately 0.274. What is the gini coefficient as a percentage? [Hint:  $G = 1 - 2S$ ]