Bertrand Attrition Game

1. The class will break up into 6 different companies, all of which are competitors producing the same type of product.

2. Every year, each company can decide whether to close or stay open. If the company closes, they will receive no future payoff beyond what they have already earned and cannot open again. It costs each company a fixed cost of $300 to stay open for that year.

3. If a company decides to stay open in a year, it can choose to sell products for a marginal cost (cost to produce a single product) of $2. Each company can set its own price for how much its product will sell for that year.

4. Dr. Gerstle will calculate and announce to the class how many products q_i each company sold at the end of each year. Dr. Gerstle will use a formula that will *not* be announced to the class, but you should keep in mind that generally speaking, cheaper products *will* sell in larger quantities than more expensive ones. Also, each year the *total* number of products sold will decrease due to a decrease in demand over time.

5. It will be up to each company to determine their profit in a given year. Each company's payoff π_i *for a single year they are open*, assuming they sell q_i products each at a price of $\$p_i$, is given by

$$\pi_i = (p_i - 2)q_i - 300.$$

6. Play continues until at least five countries have decided to exit the business. If one company remains at the end, they will receive a monopoly profit of $\$\frac{3000}{q}$, where q is the number of years that the game has lasted.

7. Each member of the company that has made the most money *in total* at the end of the game will receive +1 quiz point. If time allows, we will play this game multiple times.