Exercises for seminar 6

1. **Firms - profit maximization**

   (a) For the following technology, find the profit function.

   $$f(z_1, z_2) = z_1^{\frac{1}{3}} z_2^{\frac{2}{3}}$$

   (b) Check that the profit function is increasing in output prices, decreasing and convex in input prices.

2. **Uncertainty**

   (a) Suppose participating to a small poker tournament costs 12 EUR. The prize for winning is 56 EUR. You believe you are much better than the other players and expect to win with a probability of $\frac{1}{3}$. Your current wealth is 20 EUR and your preferences can be represented as a vN-M utility function with cardinal utility given by:

   $$u(x) = \ln x.$$

   Compute the certainty equivalent and the risk premium for entering the tournament. Motivate your choice to participate or not to the competition. What would your relative risk aversion be?

   (b) For the above utility function, compute the indices of relative and absolute risk aversion and evalutate them at the certainty equivalent.