1. As a consumer of beer, you are indifferent between Heineken (H) and Grolsch (G). You get 2 units of utility from either.

   (a) You have €6 and you're thirsty. You go to a bar where both H and G cost €2. Draw some indifference curves, your budget constraint, and the utility-maximizing point(s) where you would choose to consume. (Label the axes and all lines.)

   (b) As you're getting ready to order, the bartender tells you that there's a student special: a free glass with your purchase of G (you like glasses). Show where you consume, given this offer.

   (c) Your friend asks you to join her at a nearby bar, so she can give you the €5 she owes you. H costs €2 there, but G are €2.5. Draw a new budget line and show where you consume.

2. David Ricardo described "comparative advantage" in 1817, i.e., the potential for both sides to benefit from trade, even if one side is worse at producing both goods. We will use this idea here.

   (a) You are stranded on a desert island, where you can catch 2 fish per hour or harvest 6 coconuts per hour. Under the tropical sun, you can only work 6 hours per day. Draw your "production potential" for fish (vertical axis) and coconuts (horizontal axis).

   (b) You like to consume 3 coconuts per fish you eat, in a fixed ratio. Write down this utility function.

   (c) Draw indifference curves that match your utility function and label the point indicating your utility maximizing consumption on a normal day.

   (d) One day, you meet Max, a friendly guy who is also stranded on the island. He is better at harvesting both fish and coconuts (at a rate of 4 and 8 per hour, respectively), and he always likes more of either. Max offers to trade 7 fish for 15 of your coconuts. Calculate how both you and Max may be better off from trading, i.e., write down your utility and his bundle of goods before and after trade (he can also work 6 hrs).

   (e) How is it possible that Max can benefit from trading with you when he's better at harvesting BOTH fish and coconuts? Explain using the concept of "opportunity cost."