

Place your name on the back of this sheet of paper and nowhere else. Staple your answers on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

- 1) (15 points) If an indifference curve diagram has knives on the vertical axis and forks on the horizontal axis, then what is the formula for the slope of the indifference curve? Explain why that slope makes sense.
- 2) (15 points) Can indifference curves cross? If yes, then explain how it can happen. If no, then explain why not using a graph.
- 3) (55 points) Draw an indifference curve diagram with balloons on one axis and flowers on the other axis. Add a budget constraint which has the price of a flower twice the price of a balloon. How do you know that your budget constraint is drawn correctly? Illustrate an increase in the price of balloons. Why did the curve(s) moved as drawn? Draw another budget constraint which will help you determine the income and substitution effects. Explain how you found the income and substitution effects. Given your diagram, are the goods substitutes or complements? Explain your logic. Given your diagram, are either of the goods inferior goods? Explain your logic.
- 4) (15 points) What is the equi-marginal principle? What is the economic reason it should hold?