Unit 3 Lab

1. What is an indifference curve?
   1. Using the figure below, would you prefer combination B or C? Why?
   2. On the figure below, draw an indifference curve that passes through B and crosses IC1 and label the point where they cross as X.
   3. Would you prefer combination X or C? why?
   4. Would you prefer combination B or X? why?
   5. using the responses from question c and d to compare the levels of utility between combinations B and C.
   6. How does your response in e compare with your response in a?
   7. Explain why indifference curves can never cross.
   8. Explain why the indifference curve is downward sloping.
   9. Use the table below and calculate the MRS.

Hours of free time per day

Final grade

100

0

0

24

16

75

*E*

*C*

20

*D*

50

*B*

15

84

*A*

*F*

*G*

*H*

Figure 1

IC1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | A | | **E** | | **F** | | **G** | | **H** | | **D** | |
| **Hours of free time** | 15 | | 16 | | 17 | | 18 | | 19 | | 20 | |
| **Final grade** | 84 | | 75 | | 67 | | 60 | | 54 | | 50 | |
| **Marginal rate of substitution between grade and free time (MRS)** |  |  | |  | |  | |  | |  | |  |

1. Consider the studying example from the book and use the image below.
   1. Would you prefer combination A or B? Why?
   2. Would you prefer combination A or C? Why?
   3. Explain why combination C is not optimal.
   4. Explain why you would not pick a combination on IC4.
   5. Explain in your own words the meaning of the MRS=MRT.
   6. At point B, is should Alexi increase or decrease his free time? Why?

90

*IC4*

*IC2*

*IC2*

*IC3*

*IC1*

Feasible

frontier

57

19

0

0

24

*A*

*B*

*C*

*D*

*E*

Hours of free time per day

Final grade

100

MRS = MRT

1. When you were introduced to the production function, we assumed it was concave, it increased but at a decreasing rate. Draw a production function that becomes steeper as input increases.
   1. What is a production function?
   2. What is true about the relationship between the marginal product and the average product? (which one is greater?)
2. Let’s talk about ceteris paribus.
   1. In the reading, one of the examples was about deciding how many hours to study. There was a trade-off between free time and the grade received. In addition to the study environment, what other factors are being held constant that matter?
   2. What information would you need to be able to include these additional factors into the model?