Rational Consumer Behavior: Preferences

I. Preferences
   A. Cardinal Versus Ordinal Utility
   B. Assumptions
      1. Completeness
      2. Non-satiation = More is better
      3. Transitivity
      4. Convexity - Diminishing marginal rate of substitution (MRS)
   C. Graphical Representation – “typical” indifference curves
   D. Special Cases
      1. General
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         a. Perfect Substitutes
         b. Perfect Complements

Preference

A. Cardinal versus Ordinal

   Utility

   1. Cardinal

   2. Ordinal

B. Assumptions

   Please rank the following three goods in the order you prefer (indifference is a possibility)
   A: 1 bag of Double Stuff Oreos
   B: 1 bag of Tostidos
   C: 1 Tony’s Frozen Pizza

   Why do we make assumptions about preferences?
1. Completeness

2. Nonsatiation = More is better

3. Transitivity

4. Convexity = Diminishing marginal rate of substitution (MRS)
   MRS: amount of Y (Oreos) you are willing to give up to get one more X (pizza) and stay indifferent.

Please answer the following questions. You may answer in fractions.

If I had 5 bags of Oreos and 5 Tony’s Frozen Pizzas for the week, I would be willing to give up _____ bags of Oreos for 1 more Tony’s Frozen Pizza and stay equally as happy.

If I had 20 bags of Oreos and 1 Tony’s Frozen Pizzas for the week, I would be willing to give up _____ bags of Oreos for 1 more Tony’s Frozen Pizza and stay equally as happy.

If I had 1 bag of Oreos and 20 Tony’s Frozen Pizzas for the week, I would be willing to give up _____ bags of Oreos for 1 more Tony’s Frozen Pizza and stay equally as happy.
C. Graphical Representation of preferences:
Utility function for two goods: \( U = U(x, y) \), amount of satisfaction from consuming \( x \) and \( y \).
Indifference Curves - describe all the combinations (bundles) of goods that give you an equal amount of satisfaction: \( \bar{U} = U(x, y) \), where \( \bar{U} \) is a fixed amount of utility.

1. Typical Preferences

[Diagram showing indifference curves with points labeled A, D, and E.]

Non-satiation:
Consider point A

Slope of indifference curve

tangency:

**Diminishing Marginal Rate of Substitution**
Point D: If I had 20 Oreos and 1 Pizza, I would be willing to give up _____ Oreos for 1 more Pizza and stay equally as happy. The MRS at D is \( >, <, \text{ or } = \) the MRS at A.
Point E: If I had 1 Oreos and 20 Pizzas, I would be willing to give up _____ Oreos for 1 more Pizza and stay equally as happy. The MRS at E is \( >, <, \text{ or } = \) the MRS at A.
Generally: Indifference curves will be convex to the origin (0,0) -
Definition of convex: a chord drawn between two points on the indifference curve
lies above the indifference curve

 Completeness implies

Different Preferences:

<table>
<thead>
<tr>
<th>Likes Pizza Relative to Oreos</th>
<th>Likes Oreos Relative to Pizza</th>
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Who has the higher MRS at any given level of X and Y?
D. Special Cases
1. General

Which assumptions do these break?

a. 

b. 

A'B'C and R'S'T
All points on I₂ are preferred to I₁

c. 

d. Graph the indifference curve for food and garbage

food

[Graph of indifference curve for food and garbage]

garbage
2. **Specific**

   a. **Perfect substitutes**

      Describe:

      Examples:

      You have chronic headaches from studying (except when you are studying economics, of course...). All you care about is getting rid of the pain any way you can.

      What do indifference curves look like?

      Examples:

      Above case:  \( U = U(x, y) = \)

      General Form:

      What do indifference curves look like?

      MRS:

      Diminishing Marginal Rate of Substitution?
b. Perfect Complements

Describe:

Examples:

What does this imply for the shape of the indifference curves?

General Form:  \( U = \)

Examples:

Above \( U = U(x, y) = \)

For every cup of hot chocolate (h), I always use 2 marshmallows (m)

\( U = U(x, y) = \)