Example

Camera Purchase

The objective: *to select the best overall camera.*

The alternatives are labeled A, B, C, D

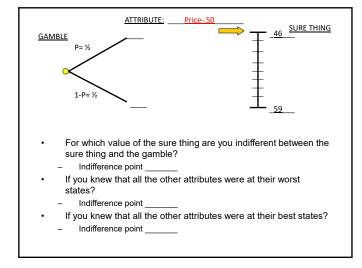The attributes are Price, Screen Size, Resolution, and Video Quality

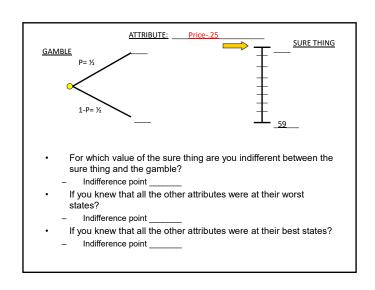The alternatives (cameras) under consideration have the following ranges for the attributes:

Attributes:	Price $	Screen inches	Megapixels mp	Vidcap xp
Range	46-59	2.4-3	12-36	720-1080 (binary)

Step 1. We need the utility functions for these attributes…

ATTRIBUTE: Price-.50

GAMBLE

P= ½

1-P= ½

SURE THING

46

59

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: Price-.25

GAMBLE

P= ½

1-P= ½

SURE THING

59

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: ___Price-.75___

GAMBLE

P= ½

1-P= ½

➡ ___ 46 ___ SURE THING

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _Screen Size-.50_

GAMBLE

P= ½

1-P= ½

➡ ___ 3 ___ SURE THING

___ 2.4 ___

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
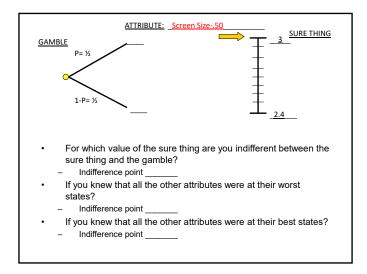 - Indifference point _____

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ATTRIBUTE: _Screen Size-.25_

GAMBLE

P= ½

1-P= ½

➡ SURE THING

___ 2.4 ___

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _Screen Size-.75_

GAMBLE

P= ½

1-P= ½

➡ ___ 3.0 ___ SURE THING

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _____Megapixels-.50_____

GAMBLE

P= ½

1-P= ½

SURE THING

_36_

_12_

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _____Megapixels-.25_____

GAMBLE

P= ½

1-P= ½

SURE THING

_12_

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _____Megapixels-.75_____

GAMBLE

P= ½

1-P= ½

SURE THING

_36_

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _____Video Capability-.50_____

GAMBLE

P= ½

1-P= ½

SURE THING

1080

_720_

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _Video Capability-.25_

GAMBLE

P= ½

1-P= ½

SURE THING

720

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

ATTRIBUTE: _Video Capability-.75_

GAMBLE

P= ½

1-P= ½

SURE THING

1080

- For which value of the sure thing are you indifferent between the sure thing and the gamble?
  - Indifference point _____
- If you knew that all the other attributes were at their worst states?
  - Indifference point _____
- If you knew that all the other attributes were at their best states?
  - Indifference point _____

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Order of importance of attributes.
Which attribute would you change from its worst state to its best state?

Attribute	Price $	Screen in.	Megapix mp	Vidcap xp
Best state	46	3	36	1080
Worst state	59	2.4	12	720
Order of importance				

Importance of: _____Price_____
For what value of p are you indifferent between the sure thing and the gamble?

SURE THING   GAMBLE

REFERENCE SYSTEM   OR

P — BEST SYSTEM

1 - P — WORST SYSTEM

P=   100% / 50% / 0%

	Price	screen in.	Mp	Video Cap
Reference	46			
		2.4	12	720
Best	46	3	36	1080
Worst				
	59	2.4	12	720

Importance of: _____ Screen size _____

For what value of p are you indifferent between the sure thing and the gamble?

SURE THING   GAMBLE

REFERENCE SYSTEM   OR   P — BEST SYSTEM   P=   100%
                          1 - P — WORST SYSTEM   50%
                                                      0%

	Price	screen in.	Mp	Video Cap
Reference		3		
	46		12	720
Best	46	3	36	1080
Worst				
	59	2.4	12	720

Importance of: _____ Mp _____

For what value of p are you indifferent between the sure thing and the gamble?

SURE THING   GAMBLE

REFERENCE SYSTEM   OR   P — BEST SYSTEM   P=   100%
                          1 - P — WORST SYSTEM   50%
                                                      0%

	Price	screen in.	Mp	Video Cap
Reference			36	
	46	2.4		720
Best	46	3	36	1080
Worst				
	59	2.4	12	720

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Importance of: _____ Video Cap _____

For what value of p are you indifferent between the sure thing and the gamble?

SURE THING   GAMBLE

REFERENCE SYSTEM   OR   P — BEST SYSTEM   P=   100%
                          1 - P — WORST SYSTEM   50%
                                                      0%

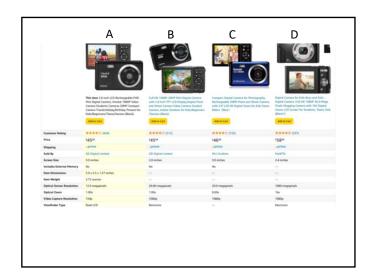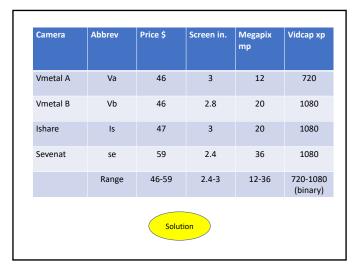|	Price	screen in.	Mp	Video Cap
Reference				1080
	46	2.4	12	
Best	46	3	36	1080
Worst				
	59	2.4	12	720

Now we have the value data from the decision maker.

The next step is to derive the utility functions in preparation for the calculations.

Next week, I will compute the multiattribute utility for each camera.

Camera	Abbrev	Price $	Screen in.	Megapix mp	Vidcap xp
Vmetal A	Va	46	3	12	720
Vmetal B	Vb	46	2.8	20	1080
Ishare	Is	47	3	20	1080
Sevenat	se	59	2.4	36	1080
	Range	46-59	2.4-3	12-36	720-1080 (binary)

Solution

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