

## WEEK 2 EXERCISE

- (1) It may rain tomorrow, it may not. So there are two states of the world. You have six umbrellas, ranging from one that's 3 feet long, four pounds, large, black, highly resistant to wind, and keeps you absolutely dry, to one that collapses to six inches, fits in your backpack, gets easily turned out by wind, and keeps little more than your head dry. You could also carry no umbrella at all.

Each umbrella implies a utility level for you when it does rain and a utility level when it does not. Here is a table of the two utility levels:

	rain	sun
A	1	1
B	.6	2
C	.5	2.6
D	.3	3
E	.25	3
F	.1	4
none	-1	6

- (a) Which, if any, of the choices are inadmissible?
- (b) Because the set of attainable utility distributions is discrete, it is not convex. So it could be that there are admissible choices of umbrella that do not maximize expected utility for any probability of rain. Are there such umbrella choices, and which are they?
- (2) For the AK dataset sample distribution, calculate the conditional expectation of `educ` given decile of `logwage` and the conditional expectation of `logwage` decile given `educ`. Note that each of these is a function, so you should display them as plots.

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*Date:* September 7, 2020.

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