

# Aggregation

Assignment 7, Due March 23, 5pm

Answer **one** of the two following questions, in about 400-500 words. You should answer the question at the end, defend your answer, and say a bit about the best argument for the opposing answer, and why you don't think that argument works.

## Question One

Alice, Betty and Carla are deciding where to go for brunch. They have two choices, the Diner or the Eatery. They have talked about each of the following propositions, and have settled views about each of them.

- P1 - Does the Diner serve only free range eggs?
- P2 - Does the Eatery serve only free range eggs?
- P3 - Which place has tastier food?
- P4 - Should we boycott restaurants that serve eggs that are not free range?
- P5 - Should we go to the restaurant with the tastiest food that we are not boycotting?
- P6 - Where should we eat?

Here are their views on these questions.

	P1	P2	P3	P4	P5	P6
Alice	Yes	Yes	Eatery	Yes	Yes	Eatery
Betty	Yes	No	Eatery	Yes	Yes	Diner
Carla	Yes	No	Eatery	No	Yes	Eatery

Where should the friends eat?

## Question Two

Alice is offered a choice of two bets that concern a pair of basketball games. The Ducks are playing in the first game, and the Emus are playing in the second game.

- Option A wins \$100 if the Ducks and Emus both win, and nothing otherwise.
- Option B wins \$50 if either the Ducks or the Emus lose (i.e., if it is not the case that Option A wins), and nothing otherwise.

Alice must choose one, and just one, of these options.

Alice knows almost nothing about basketball, so she asks her two friends Betty and Carla. They both have lots of knowledge about basketball, and have extremely good track records at forecasting basketball games.

Betty says that the two games are probabilistically independent, and each team (the Ducks and the Emus) has an 80% chance to win their game. So the chance that Option A will win is 64%, and the chance that Option B will win is 36%.

Carla says that the two games are probabilistically independent, and each team (the Ducks and the Emus) has a 30% chance to win their game. So the chance that Option A will win is 9%, and the chance that Option B will win is 91%.

Alice has no other information about the games. Which option should she take?