Exercise 2A.1

In the example from the lecture, the following probability mass function was given for X, where X is the final grade in 6210:

Grade:	F	D	C	B	A
Value of X:	0	1	2	3	4
Probability:	0.05	0.05	0.1	0.6	0.2

What is $E(X)$?

Exercise 2A.2

Consider a game in which you (the contestant) and the banker flip a coin. Based on the result of the fair coin flip, the following occurs:

- Heads: The banker pays the contestant $10
- Tails: The contestant pays the banker $10

How much do you expect to win in the long run? Is this a fair game?

Exercise 2A.3

According to the U.S. Census Bureau, the number of people per household in the U.S. had the distributions below for the years 1900 and 2006:

	Number of People in the Household						
Year	1	2	3	4	5	6	7
1900	5.1%	15.0%	17.6%	16.9%	14.2%	10.9%	20.3%
2006	25.5%	33.1%	16.4%	14.6%	6.7%	2.3%	1.4%

(a) If one household was randomly selected in 1900, how many people do you expect to live there?

(b) If one household was randomly selected in 2006, how many people do you expect to live there?