

1. The die is “loaded”, so outcomes are not equally likely. A student estimated the probabilities of each face showing as follows:

Number showing	1	2	3	4	5	6
probability	.10	.15	.25	.01	.55	.30

Is this a valid probability assignment? Explain why or why not.

2. A frequency distribution for the number of cars owned by each of the **6487** families in a small city is shown below.

Cars owned	0	1	2	3	4	5
Number of families=f	27	1422	2865	1796	324	53

For a family selected at random, let
 A= event that the family owns at most 3 cars and B= event that the family owns at least 3 cars

- a) Compute the probability of the event (A and B)
 - b) Are events A, B mutually exclusive? Explain why or why not.
 - c) Compute the probability of the event (not A)
3. Experiment consists of tossing a fair coin 3 times
- a) Write down the sample space for that experiment (Hint: there are 8 possible outcomes)
 - b) Let A= event that first toss comes up heads and B= event that there are at least 2 heads.
 Compute the probability of the event (A or B)
4. Suppose we roll a balanced die two times, compute the probability that sum of both rolls is not 8.

5. The relative frequency table below represents the data on cholesterol levels of a group of patients. Use the table to answer the following questions:

Cholesterol Level	Relative Frequency
195- under 200	.05
200- under 205	.15
205- under 210	.20
210- under 215	.35
215- under 220	.20
220- under 225	.05

Suppose a random patient is selected, what is the probability that the patient has cholesterol level under 205 or 215 or higher?

6. A review of voter registration records in a small town yielded the following table of the number of males and females registered as Democrat, Republican or some other affiliation.

	Male	Female	total
Democrat	300	600	900
Republican	500	300	800
Other	200	100	300
total	1000	1000	2000

Suppose that a registered voter from that town is randomly selected.

Let A=event that voter is a Democrat

B= event that voter is a Female

- (3 points) What is the probability of event A?
- (3 points) What is the probability of event (A and B)?
- (3 points) What is the probability of event (A or B)?