

EE304 Probability and Statistics - Tutorial 1

Question 1

A fair coin is tossed three times. What is the probability of getting:

- (i) exactly two heads?
- (ii) exactly 1 tail?
- (iii) at least 1 tail?

Question 2

A 4 sided fair die is thrown twice. What is the probability that the sum of the two outcomes is:

- (i) equal to 6?
- (ii) at least 6?
- (iii) at most 2?

Question 3

An unfair 6-sided die has the following properties. Each of the numbers 1, 3, 5 is equally likely; each of the numbers 2, 4, 6 is equally likely; an even number is twice as likely to occur as an odd number. If this die is rolled once, what is the probability that the result is:

- (i) a number strictly less than 4?
- (ii) divisible by 3?

Question 4

E, F, G are events with $P(E) = 0.3$, $P(F) = 0.4$, $P(G) = 0.6$. Also, $P(E \cap F) = 0.1$, $P(E \cap G) = 0.2$, $P(F \cap G) = 0.2$, $P(E \cup F \cup G) = 0.9$. What is:

- (i) $P(E \cup F)$?
- (ii) $P(E \setminus F)$?
- (iii) $P(E \cap F \cap G)$?