MM2 – Chapter 15 – Section 6

Pre-Class Question:

1. What are the main differences between the Binomial distribution and the Poisson distribution. Write a couple of sentences about it

Class Worksheet

1. If you threw a 5 dice, what's the probability that you would get 3 6s?
2. What's the probability to find exactly 5 heads in 7 coin flips?
3. Fine the probability that between 47 and 50 heads are thrown in 100 coin flips.
4. Poisson distribution:
    a. Prove the Poisson distribution is given by solving the following differential equation:
    $$\frac{dP_n}{dt} = \mu P_{n-1} - \mu P_n$$
    b. Show the solution is:
    $$P_n = \frac{(\mu t)^n}{n!} e^{-\mu t} \rightarrow \frac{(\mu)^n}{n!} e^{-\mu}$$
5. You have 5 exams during 5 days of the week. Find the prob. That on given day you have 0 exams, 1 exams, 2 exams, …