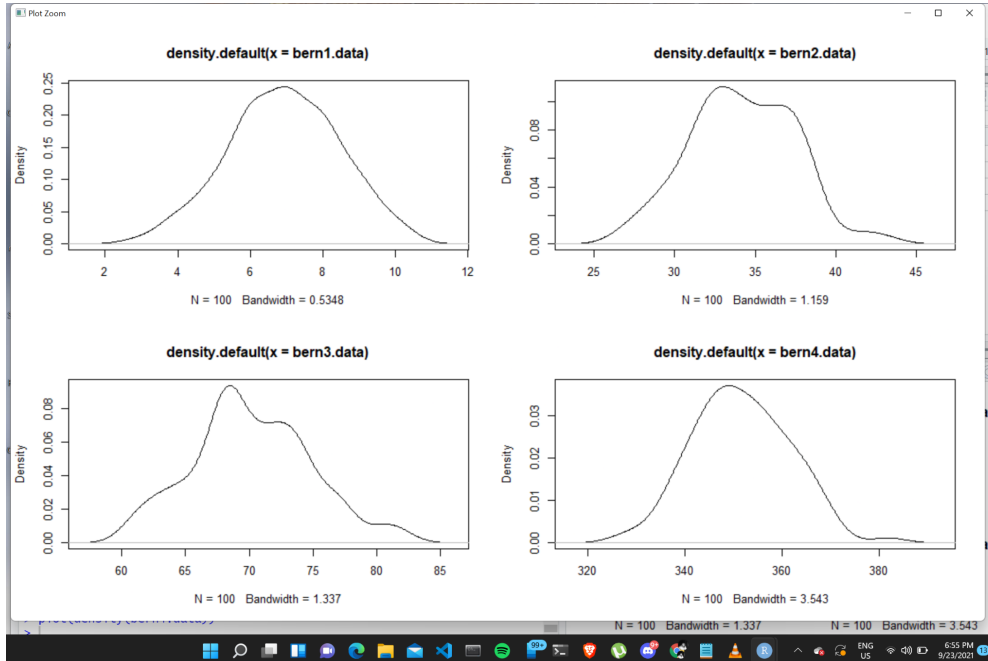


Q1

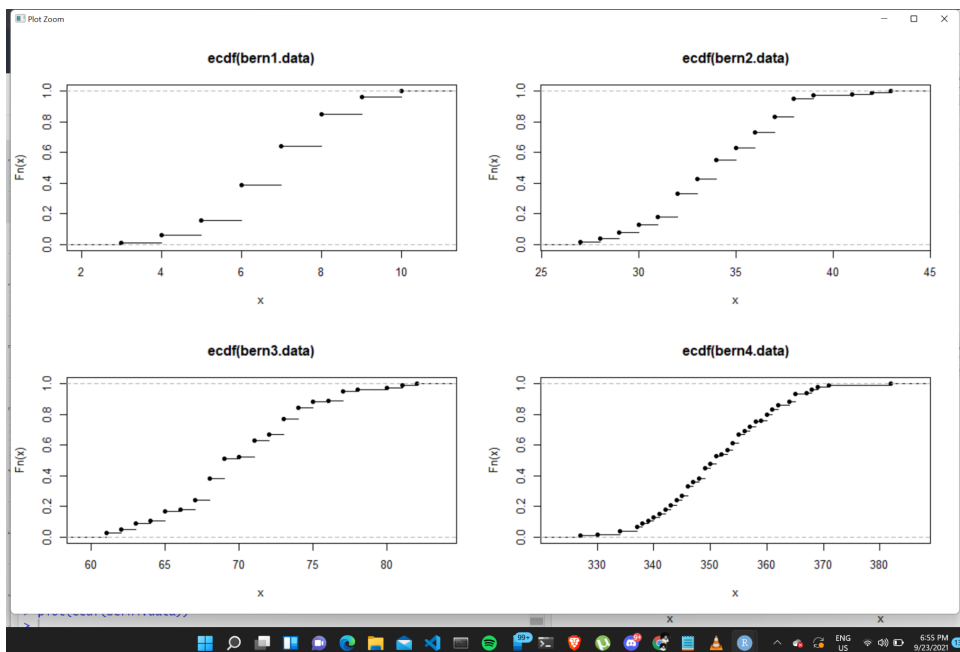
b)

In each figure, the graph peaks at $0.7 \cdot t$ for each $t(10, 50, 100, 500)$, with $p=0.7$. Expected behavior because it depends on the number of trials and probability of success.

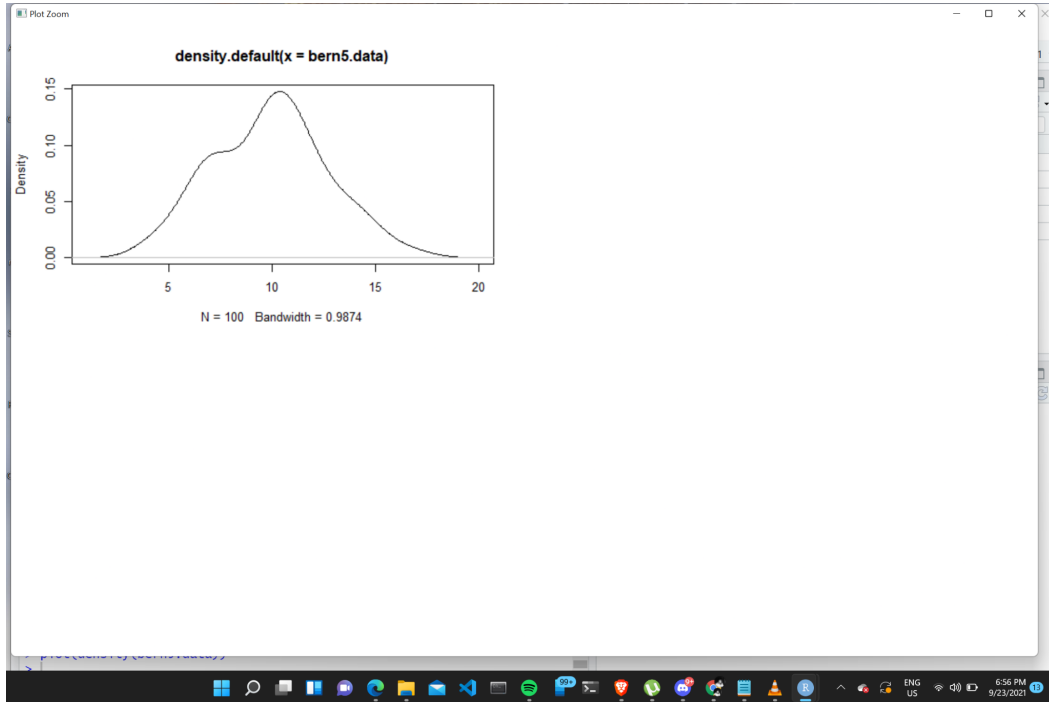


c)

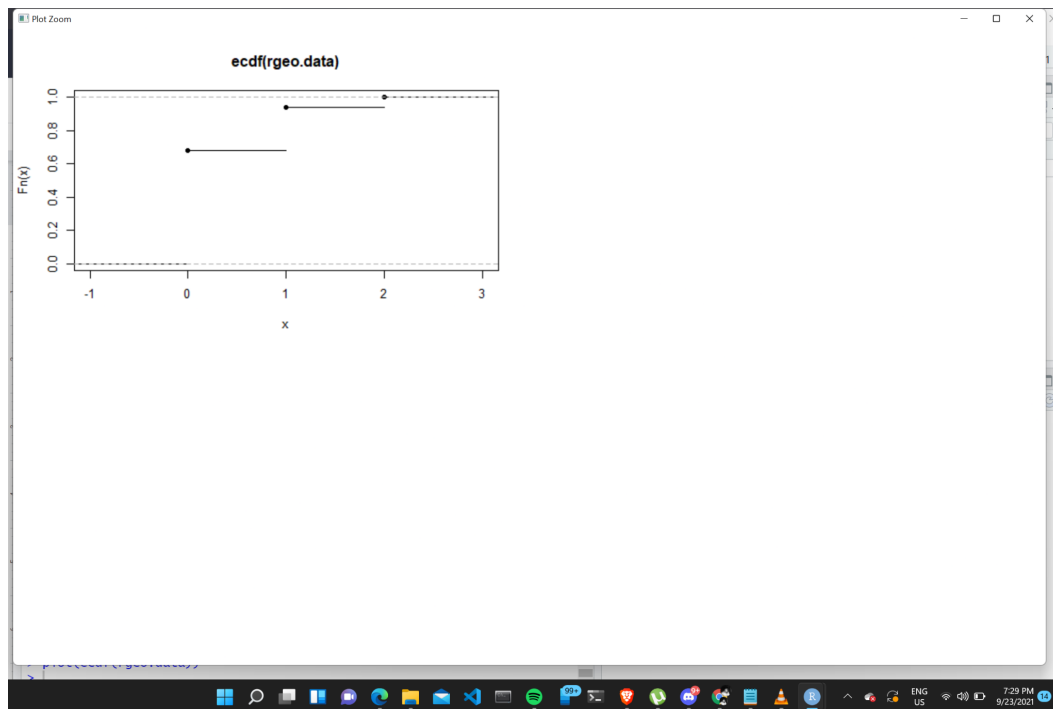
If we visualize all the figures as curves, the curve becomes steeper and steeper with increasing value of t .



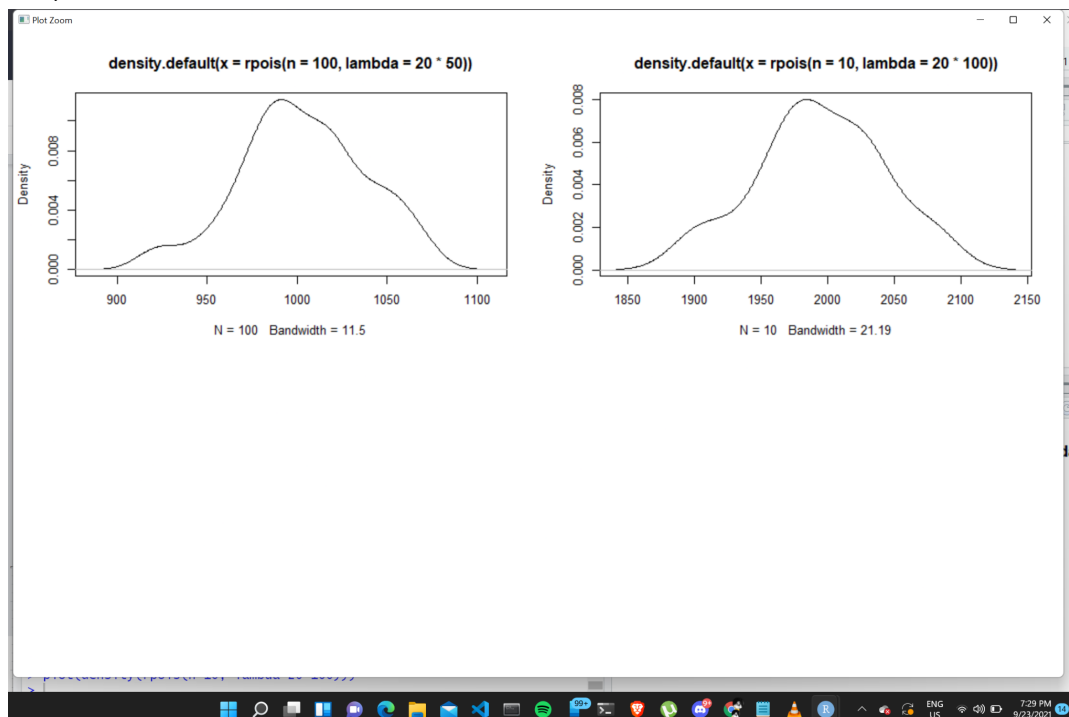
d) The graph peaks at 0.1×100 , i.e. 10. For $p=0.1$ and $t=100$. After 20 (large value), the density is almost negligible.



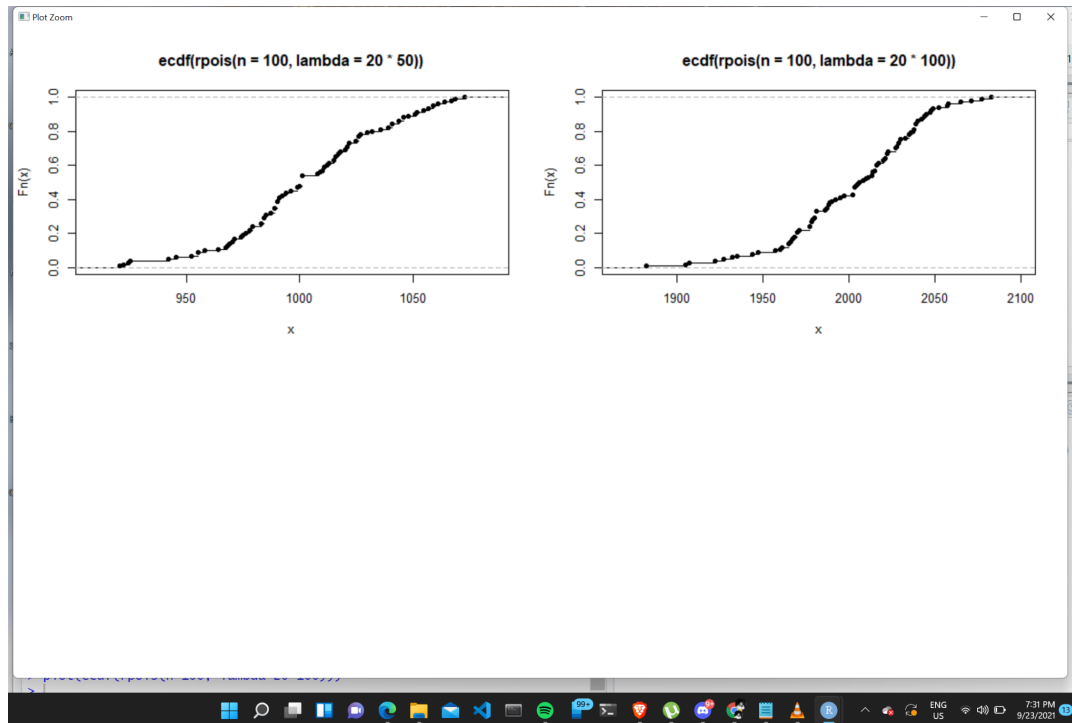
e)



2. a)



b)



c)

- In a part, The graph widens up a little when t is increased. As $\lambda = r \cdot t$, so as t increases λ also increases, and hence the Poisson value also increases, and hence the $\text{pdf}(\text{poisson})$ too.
- In b part(cdf), the steepness of the graph decreases as we increase the value of t , first figure is steeper than the second. As the variance is proportional to λ . hence if t decreases, λ also decreases(directly proportional to t).