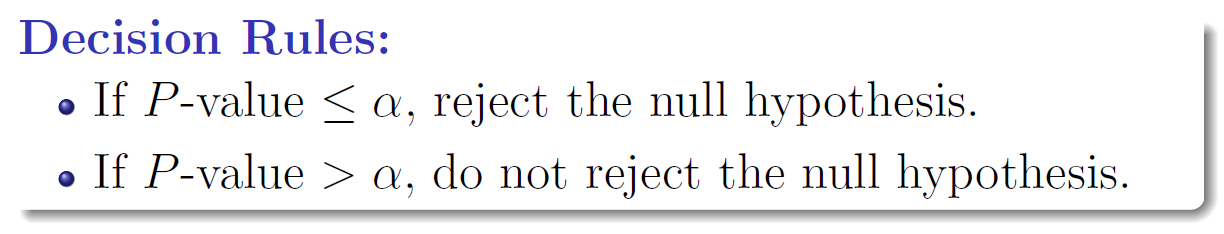
Hypothesis testing

**Level of confidence (c)** 🡪 tells us how sure we are , we have made the right thing.  
Eg:99% confidence, we decided to reject the null hypothesis. Then it is concluded it is 99% sure with certainty that rejecting null hypothesis was correct.  
Eg : If 50% of confidence, then we decided to reject the null hypothesis, then who is going to believe this???   
If the level of confidence is higher than 90%, then only believing the null/alternate hypothesis can be concluded.

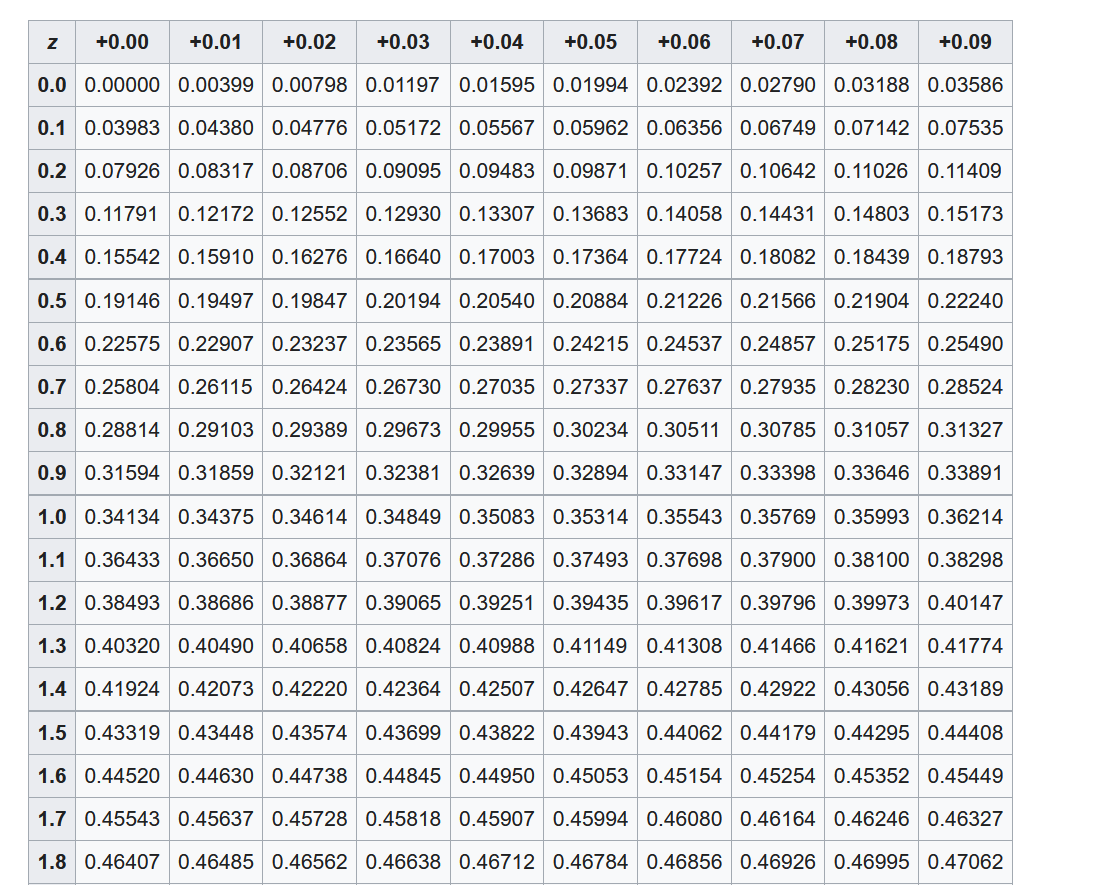
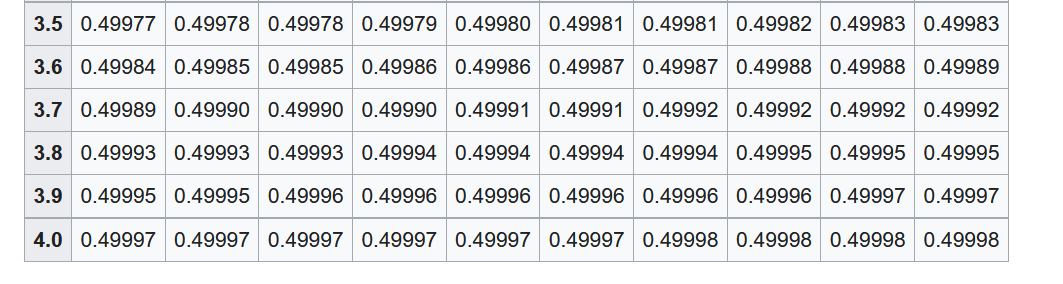
**Level of significance** ( ) 🡪 1-level of confidence.  
if Level of confidence 🡪 95%, then c=0.95  
level of significance 🡪 1 – c 🡪 1 – 0.95 🡪 0.05

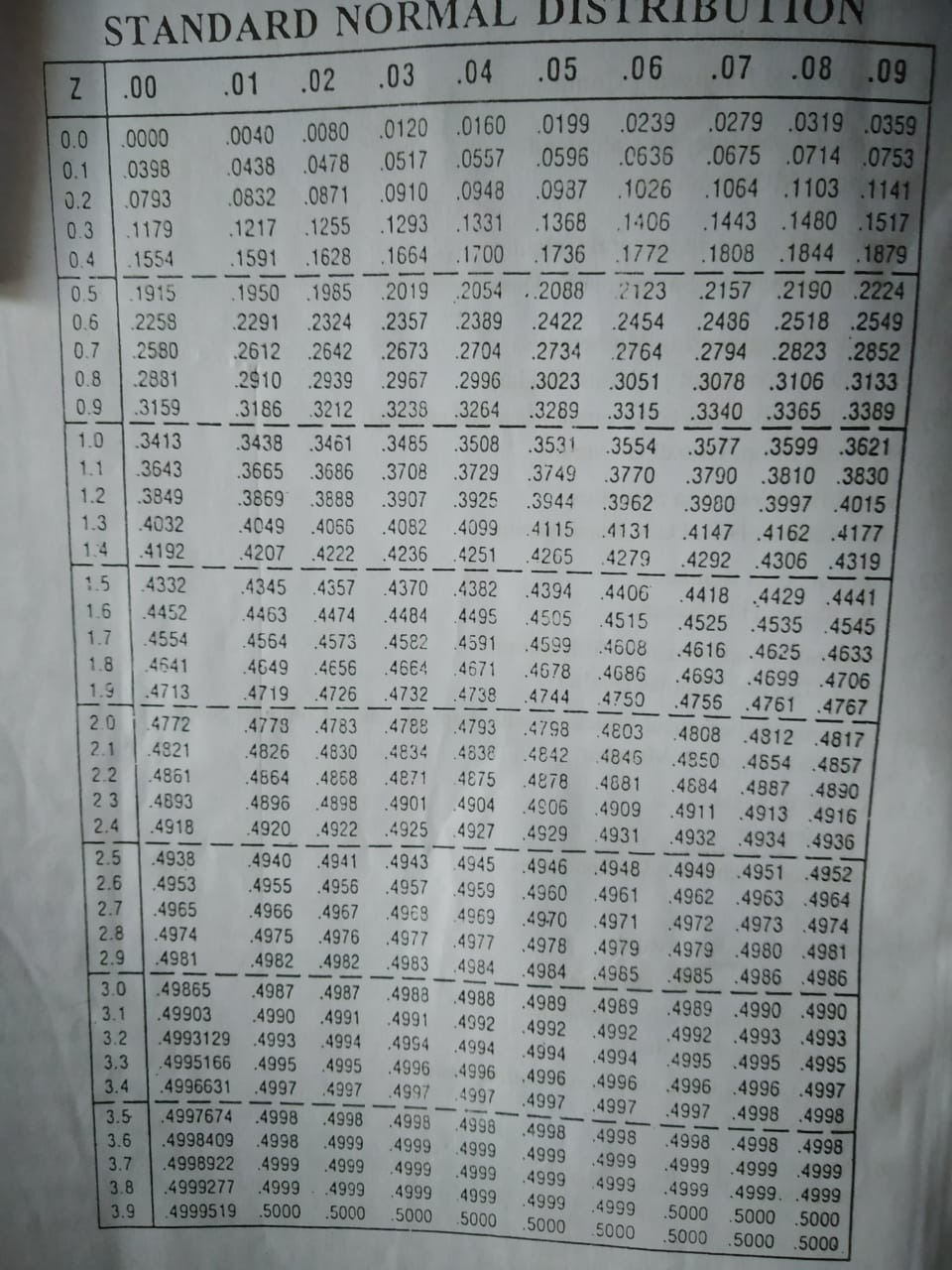


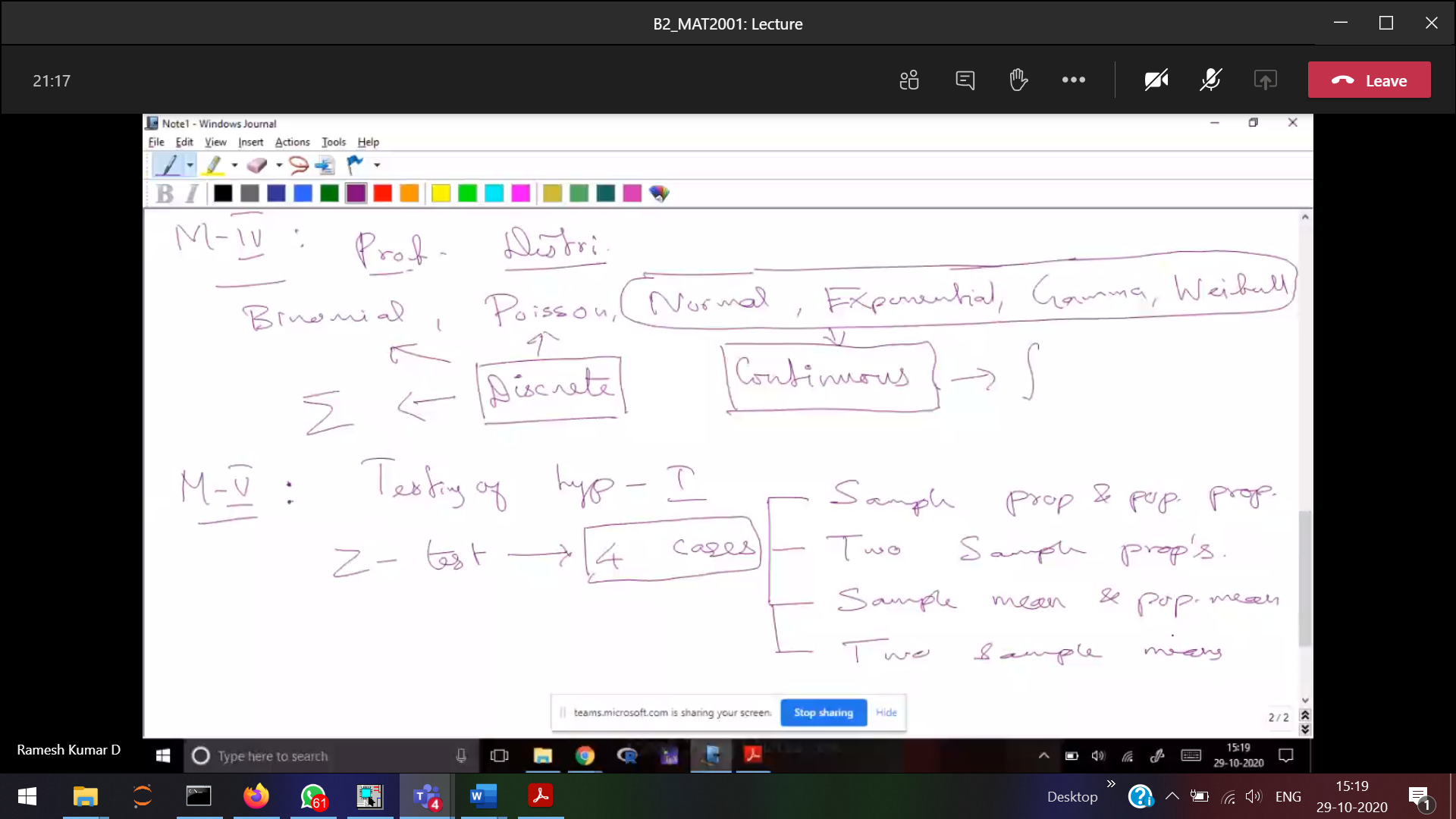
**Level of significance and level of confidence is concluding that How sure are we making the right decision or not all.**

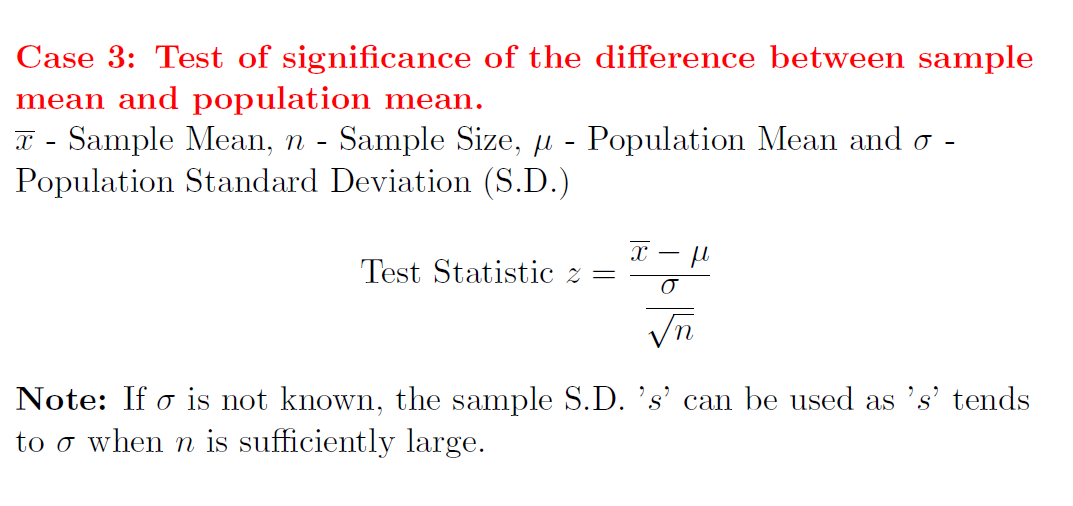
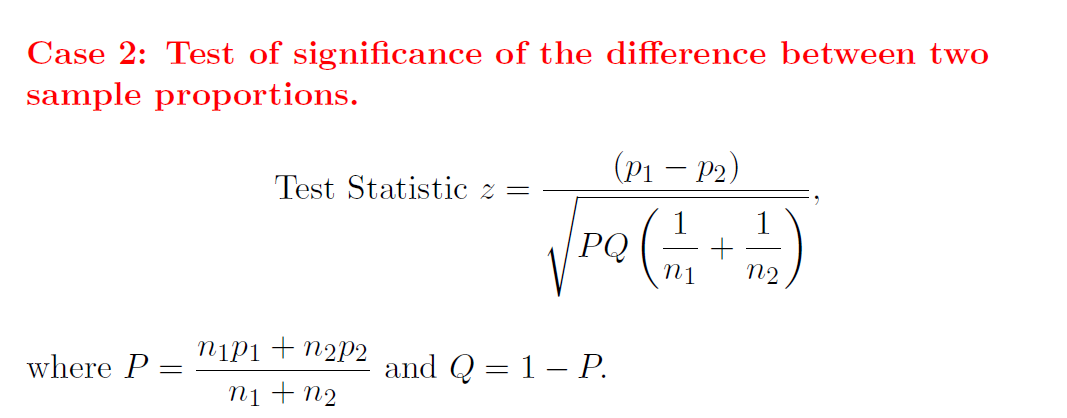
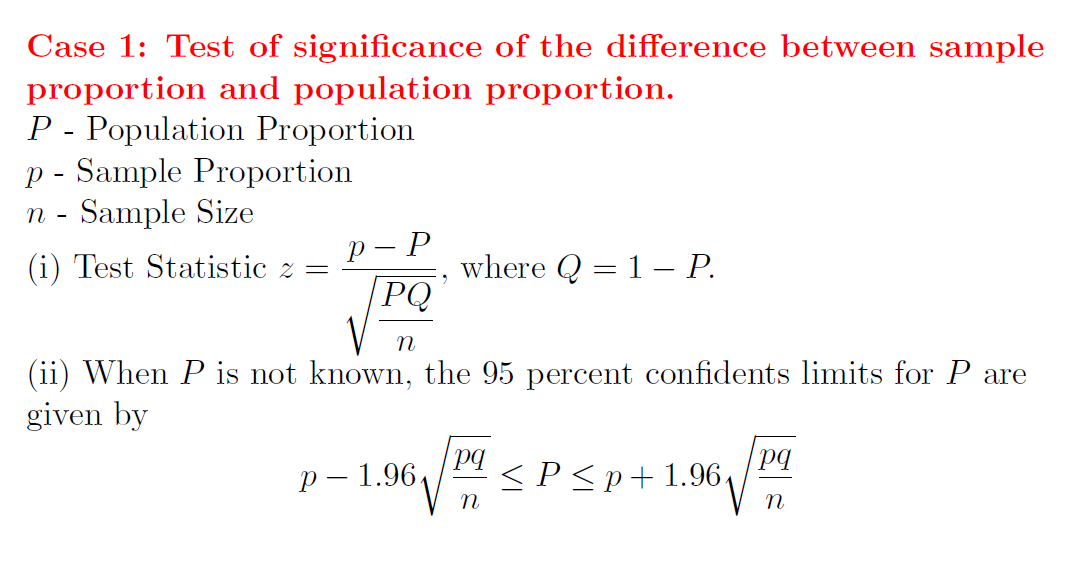
**P-value method :**

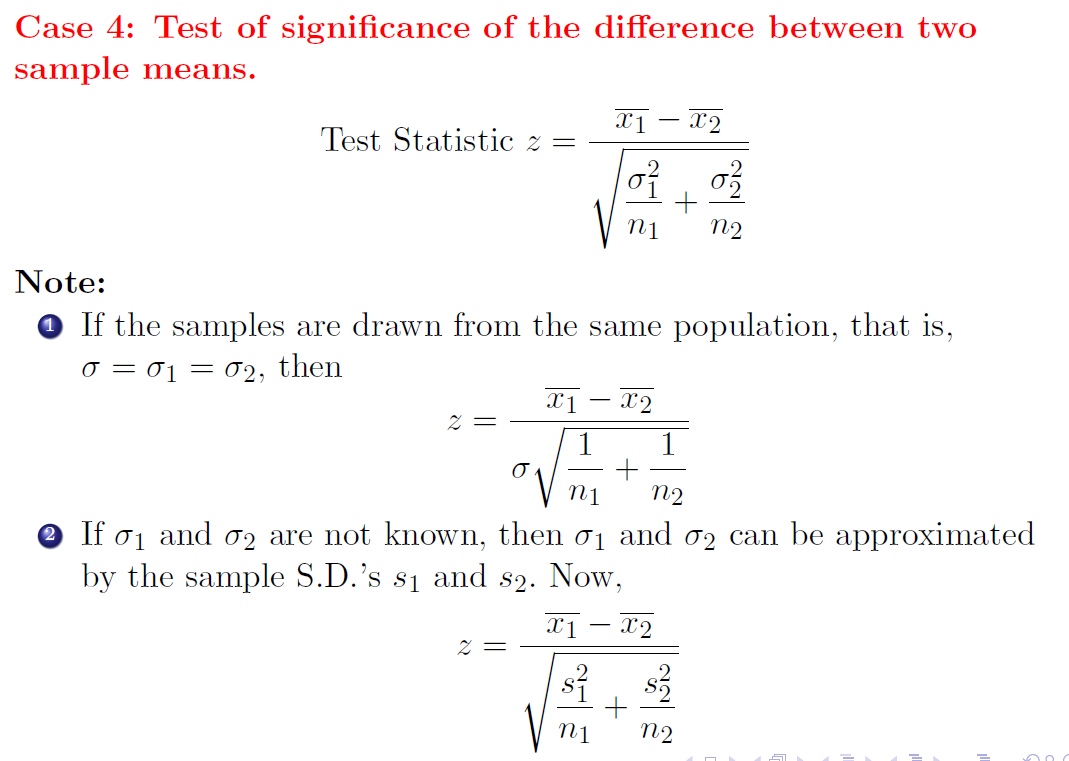
**Standard Normal Distribution Table**

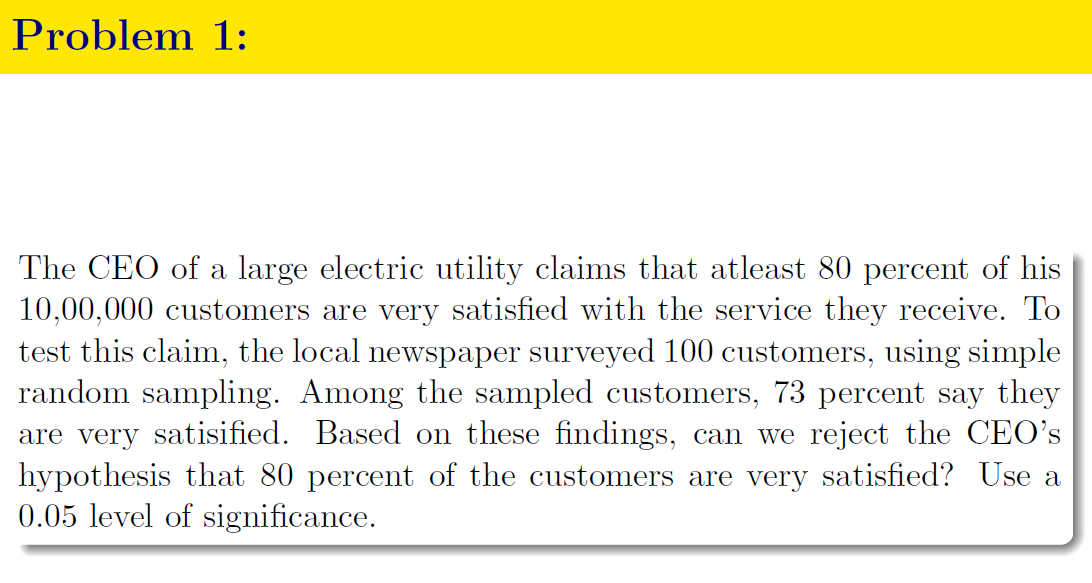
 

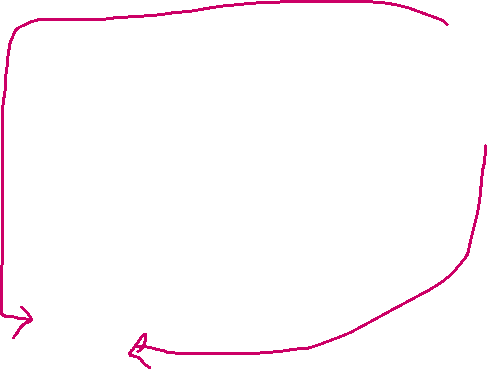


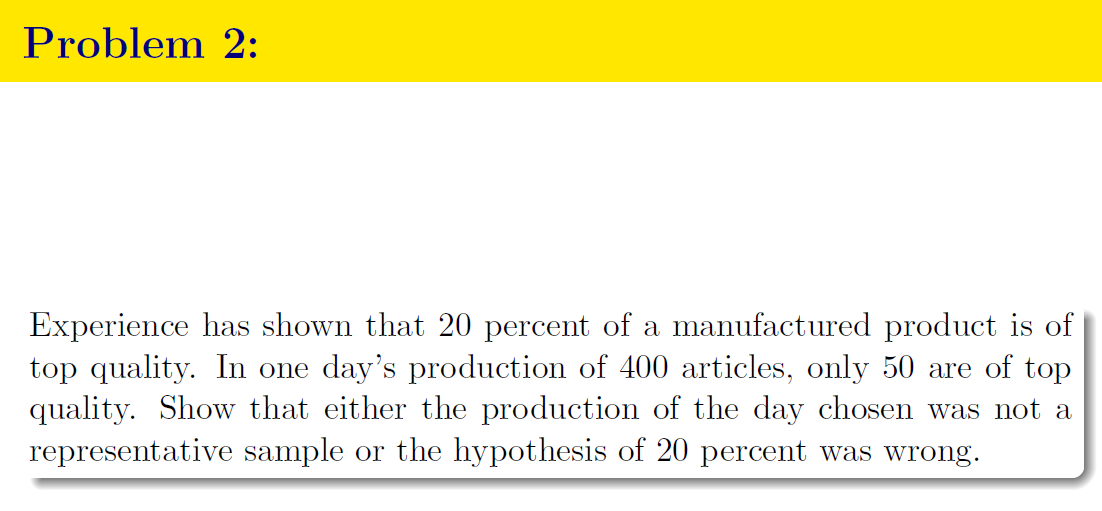






  
P = 0.8  
p = 0.73  
n = 100  
H0 : P>=0.80 (at-least 80%)  
H1 : P<0.8



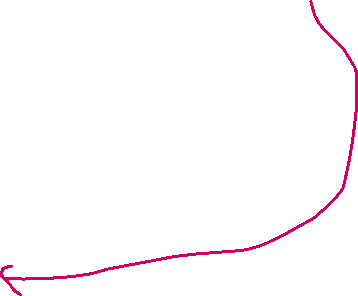


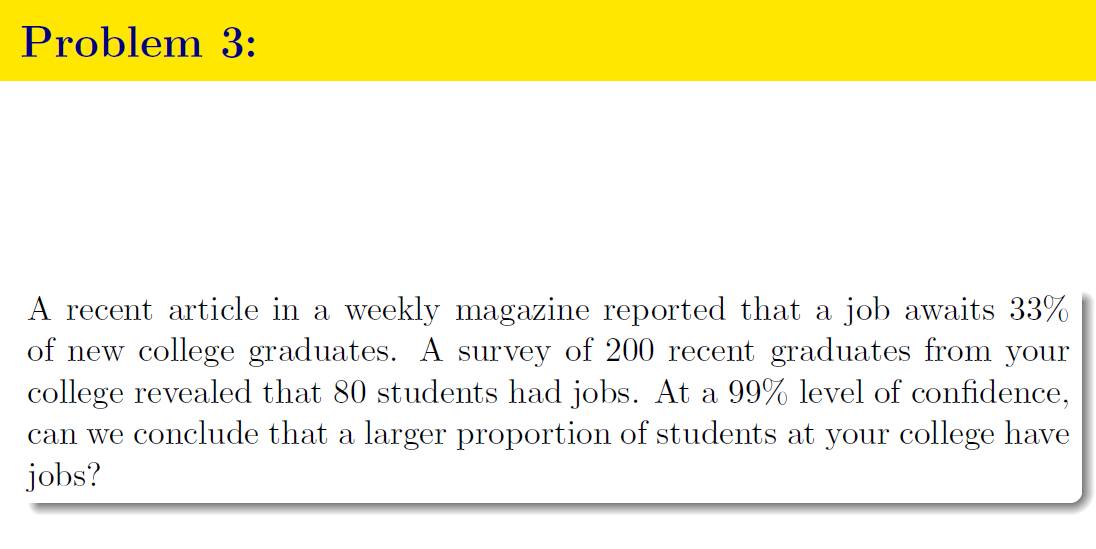


Experience 1 day’s production  
20% top quality 400 articles   
 50 article 🡪 top quality   
 (50/400)\*100 🡪 12.5% (top quality)



P = 0.2  
p = 0.125  
n = 400  
H0 : P=0.20 (correct)  
H1 : P=0.20 (wrong)





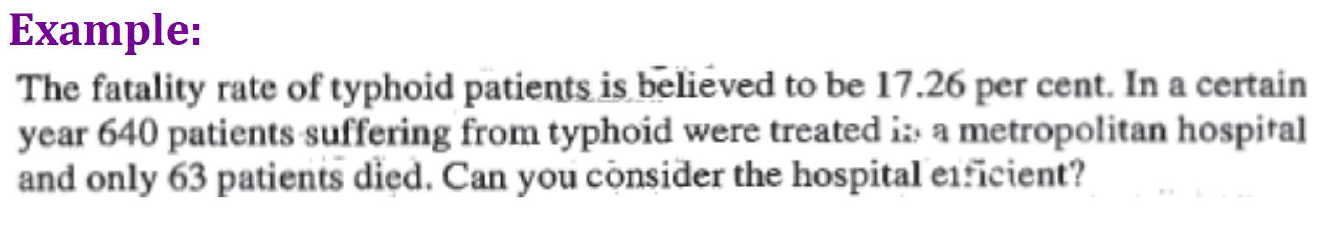


New college graduates Recent survey   
33% job offer Out of 200 only 80 got job (40%)

P = 0.33  
p = 0.4  
n = 200  
H0 : P=0.33 (correct)  
H1 : P>0.33 (wrong)



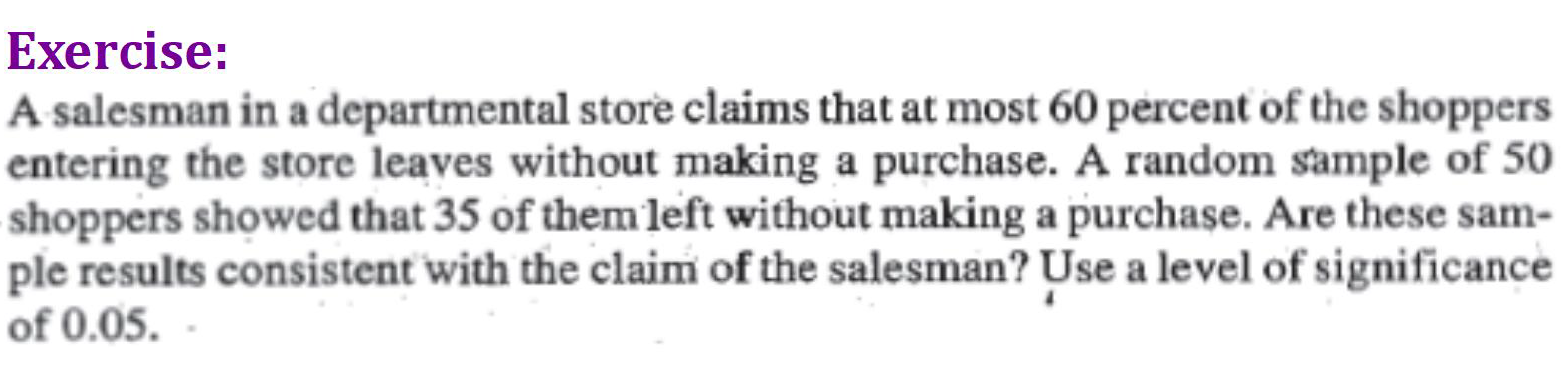
Ans : College’s claim is correct

­­

General Metropolitan Hospital   
Death 🡪 17.26% 640 patients   
 63 died (640/63)\*100 🡪 9.8%

P = 0.1726  
p = 0.098  
n = 640  
H0 : P=0.1726 (believed)  
H1 : P>p (When the death rate of the hospital is low 🡪 efficient hospital)

Ans : Hospital is efficient





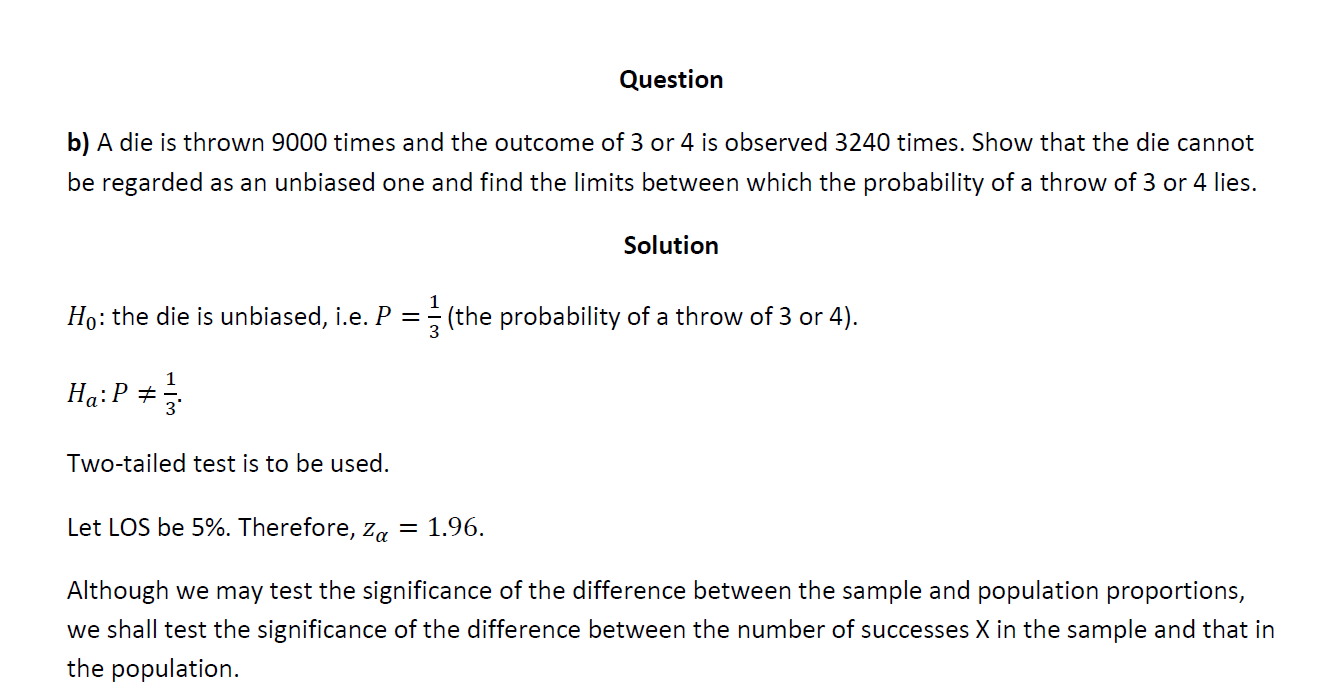
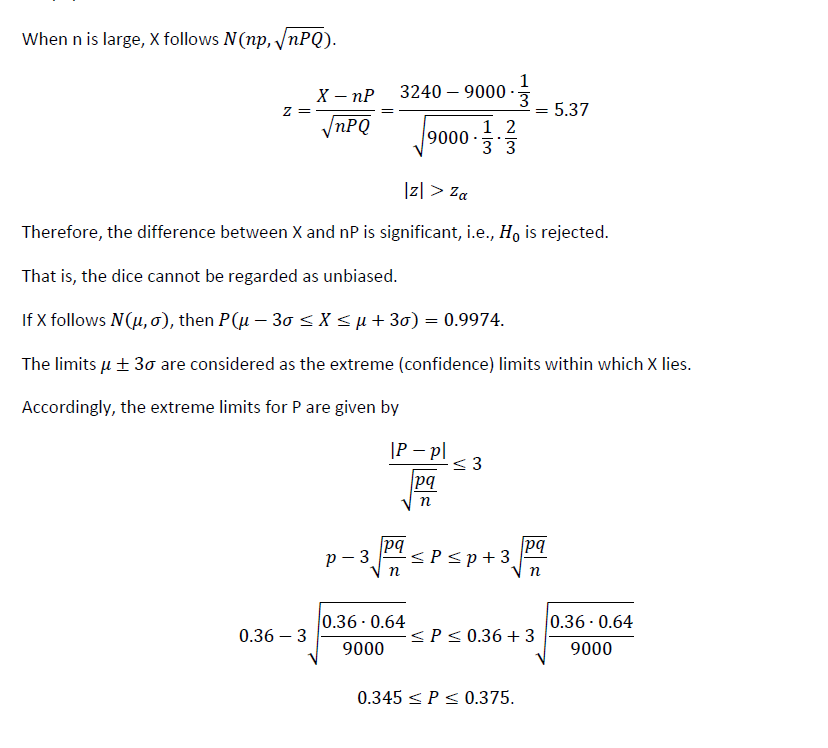
Salesman claims Random Sample   
Atmost 60% (35/50)\*100 🡪 70%



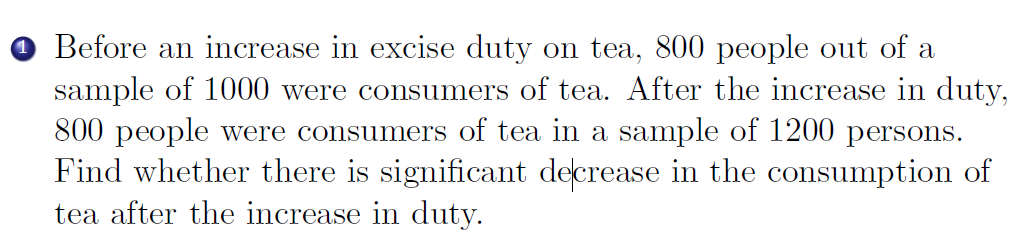
P = 0.6  
p = 0.7  
n = 50  
H0 : P<=0.6 (atmost) **[p=P]**H1 : P>0.6 (without making a purchase) **[p>P]**



Ans : Sales clerk opinion is right

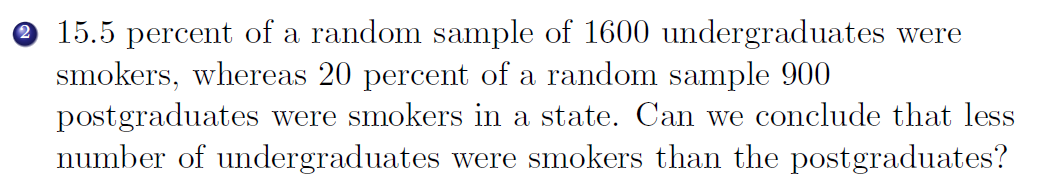
  


Case-2

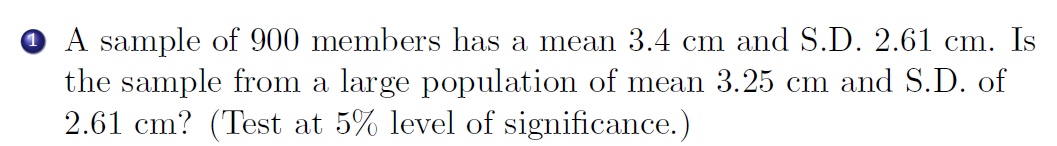


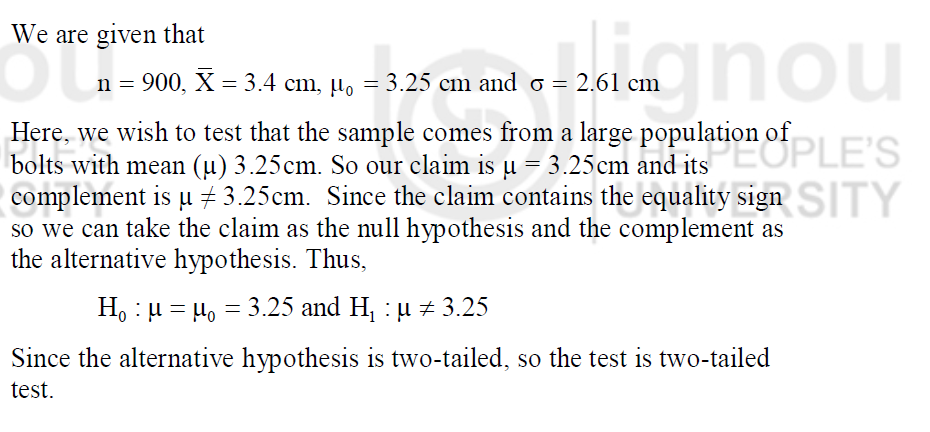
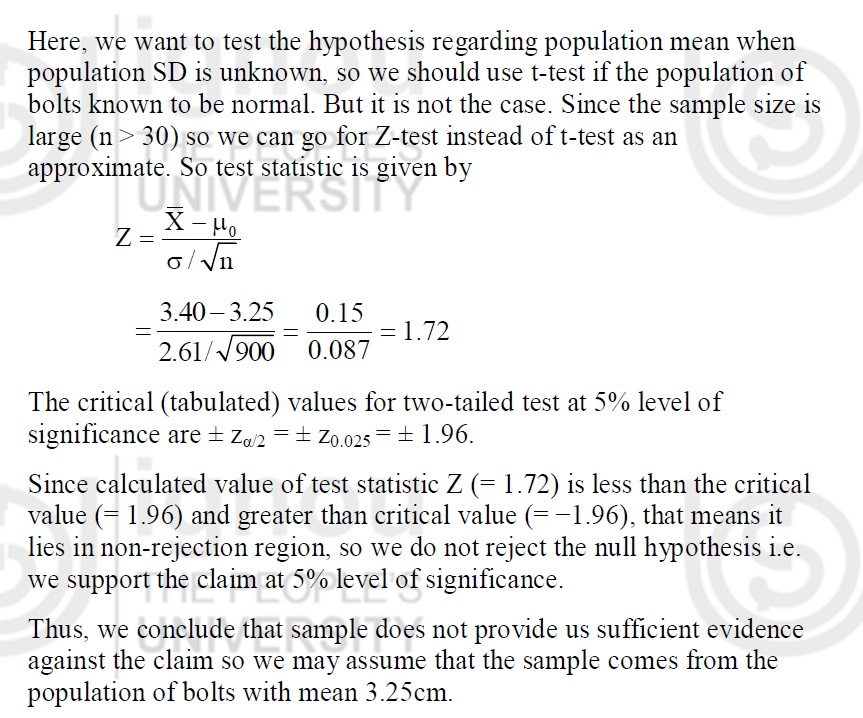
n1=1000 n2=1200  
p1 = 800/1000 🡪 0.8 p2=800/1200 🡪 0.667

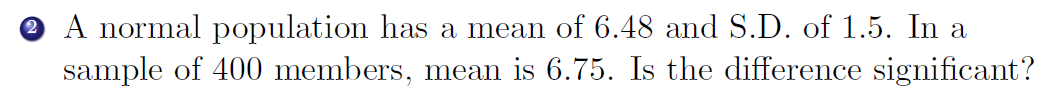
H0 🡪 p1=p2  
H1 🡪 p1>p2

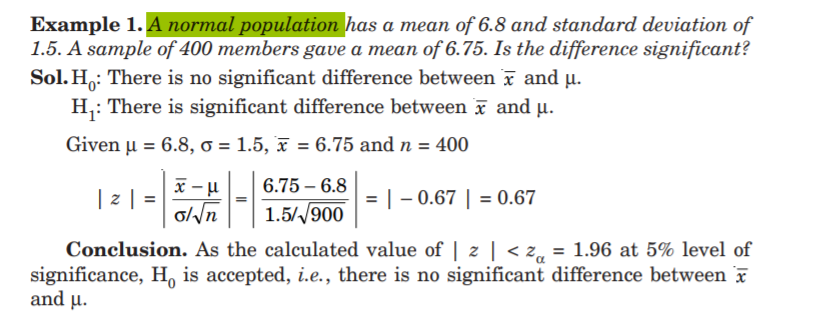
P1=0.155 P2=0.2  
n1=1600 n2=900

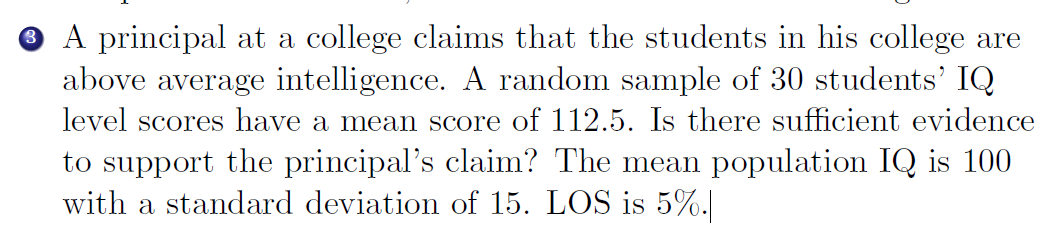
H0 🡪 P1=P2  
H1 🡪 P1<P2









<https://fr.slideshare.net/MuhammadAnas96/ztest-with-examples>

