1. BMW Company is testing the top speed of its new model X70 It has tested 100 units and found the avg top speed to be 230Km/hr with a std dev of 10km/hr Whereas company believes the avg top speed to be 260Km/hr. Company asks: Do you think being in Indian Road affects the top speed?

**Answer:**

H0:µ=260 (Indian roads do not affect top speed)

H1: µ<260 (Indian roads do not affect top speed)

N=100

x̅ =230

α=.05

s=10

t=

230-260/10/

=30

C.R

T=-20

-1.645

**Reject H0 : Indian roads affect top speed**

2. On an average, males drink 2L water per day with standard deviation σ = 0.7L. We are planning for a full day trip for 50 Men with 110L of water.

a What is the probability that we will run out of water?

b With a Significance level of 5 %, can we say that we will run of water?

**Answer:**

N=50

µ =2

= 0.7

x̅ =110/50 =2.2

p[x̅- µ/ >> 2.2-2/.7/]

P[z>.2X7.07/.7]

P[z>2.2]

.5-.4783

.0217

**Since p value as in part a is 0.0217 ie, chances of exceeding the stored amount is 2.17%**

Where α=.05/2

=.025

=2.5%

P value <2.5

**Therefore reject H0 . thus we will not run short of water.**