# Assignment (9.1) 06- Jan 2018

1. If Z is norm (mean = 0, sd = 1)

Find P(Z > 2.64)

**Sol:-** > pnorm(2.64)

[1] 0.9958547

To get the desired result we should subtract the area from 1.

> 1-pnorm(2.64)

[1] 0.004145301

Find P(|Z| > 1.39)

Sol :- > pnorm(1.39)- pnorm(-1.39)

[1] 0.8354711

> 1-0.8354711

[1] 0.1645289

2. Suppose p = the proportion of students who are admitted to the graduate school of the University of California at Berkeley, and suppose that a public relation officer boasts that UCB has historically had a 40% acceptance rate for its graduate school. Consider the data stored in the table UCBAdmissions from 1973. Assuming these observations constituted a simple random sample, are they consistent with the officerâ..s claim, or do they provide evidence that the acceptance rate was significantly less than 40%?

Use an Î± = 0.01 significance level.

**Sol:- p=0.4**

**p< 0.4**

We reject null hypothesis if p is too small i.e.:

If <

**α =** 0.01 Thus to find – we use **qnorm()**  function of **R.**

> qnorm(0.99)

[1] 2.326348

**Now to find our t Statistics**

ucb\_student <- as.data.frame (UCBAdmissions)

View(ucb\_student)

summary(ucb\_student$Admit)

Admitted Rejected

12 12

dim(ucb\_student)

[1] 24 4

prop<- 12/(24)

t<-(prop-0.4)/sqrt(0.4\*0.6/(24))

t

[1] 1