```
> #1. If Z is norm (mean = 0, sd = 1)
> #find P(Z > 2.64)
> pnorm(2.64)
[1] 0.9958547
> #P(Z > 2.64) = 0.9958547
> #find P(|Z| > 1.39
> 2 *pnorm(-abs(2.64))
[1] 0.008290603
> #Suppose p = the proportion of students who are admitted to the graduate sc
hool
> #of the University of California at Berkeley, and suppose that a public rel
ation
> #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. Ass
uming
> #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.
> UCBAdmissions
, , Dept = A

          Gender
Admit      Male Female
  Admitted  512     89
  Rejected  313     19

, , Dept = B

          Gender
Admit      Male Female
  Admitted  353     17
  Rejected  207      8

, , Dept = C

          Gender
Admit      Male Female
  Admitted  120    202
  Rejected  205    391

, , Dept = D

          Gender
Admit      Male Female
  Admitted  138    131
  Rejected  279    244

, , Dept = E

          Gender
Admit      Male Female
  Admitted   53     94
  Rejected  138    299

, , Dept = F

          Gender
Admit      Male Female
  Admitted   22     24
  Rejected  351    317
```

```
> rejected = 313+ 19 +207+8+205+391+279+244+138+299+351+317
> rejected
[1] 2771
> total =  512+89+313+19+353+17+207+8+120+202+205+391+138+131+279+244+53+94+1
38+299+22+24+351+317
> total
[1] 4526
> pbar = 1 - rejected/total
> pbar
[1] 0.3877596
> numerator = (pbar-0.4)
> denominator = sqrt((0.4*0.6)/4526)
> #As significance level is alpha = 0.01 critical value of z is -2.326
> #Calculated value of z  in proportions is z= (pbar-p)/sqrt((p(1-p))/n)
> zcalc = numerator/denominator
> zcalc
[1] -1.680919
>
>
> #Hence as zcalc is -1.680919. Hence as value does not lie in the rejection
region
```