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| **Assignment 9.1**  **Problem Statement**  #**1. If Z is norm (mean = 0, sd = 1)**  **Find P(Z > 2.64)**  **Find P(|Z| > 1.39)**  **Solution :** |
| #1. If Z is norm (mean = 0, sd = 1) |
| #Find P(Z > 2.64) |
| 1-pnorm(2.64, mean=0, sd=1) |
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| #Find P(|Z| > 1.39) |
| 1-(pnorm(1.39)-pnorm(-1.39)) |
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| **#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.** |
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| qnorm(0.99) |
| #[1] -2.326348 |
| #Our only remaining task is to find the value of the test statistic and see where it falls relative |
| #to the critical value. We can find the number of people admitted and not admitted to the UCB |
| #graduate school with the following. |
| A <-as.data.frame(UCBAdmissions) |
| head(A) |
| xtabs(Freq ~ Admit, data= A) |
|  |
| #Now we calculate the value of the test statistic. |
| phat <-1755/(1755+2771) |
| (phat -0.4)/sqrt(0.4\*0.6/(1755+2771)) |
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| #Our test statistic is not less than ???2.32, so it does not fall into the critical region. Therefore, |
| #we fail to reject the null hypothesis that the true proportion of students admitted to graduate |
| #school is less than 40% and say that the observed data are consistent with the officer's claim at |
| #the   = 0.01 significance level. |