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1: > #This script was used to do the problems on
2: > # a particular worksheet11
3: > #####
4: > ## C A S E: 1 ##
5: > #####
6: > H0 <- 14.16 # sample standard deviation
7: > alpha <- 0.0025 # set the confidence level
8: > n_1 <- 35 # set the sample size
9: > htype = -1 # type of alternative -1 for <, 0 for !=, 1 for >
10: > s_1 = 9.90 # num items with characteristic in sample
11: > df <- n_1 - 1 # get the degrees of freedom
12: > df
13: [1] 34
14: > # the long way to do the problem
15: > comp_chisqr <- df*s_1*s_1/(H0*H0)
16: > comp_chisqr
17: [1] 16.61969
18: > cs <- qchisq( alpha, df)
19: > cs
20: [1] 15.36798
21: >
22: > pchisq( comp_chisqr, df)
23: [1] 0.005350279
24: >
25: > #or we could do the problem the short way
26: > # make sure function is in the environment
27: > source("../hypo_sigma.R")
28: > hypoth_test_sigma(H0, n_1, s_1, htype, alpha)
29:      H0_sigma      Sample Size      Samp Sigma
30:      "14.16"      "35"      "9.9"
31:      H1      sig level      crit low
32:      "sigma < 14.16"      "0.0025"      "15.3679782468761"
33:      crit high      chi2 val      attained
34:      "n.a."      "16.6196854352198"      "0.00535027893675964"
35:      Decision
36:      "Do Not Reject"
37: > #
38: > #####
39: > ## C A S E: 2 ##
40: > #####
41: > H0 <- 42.92 # sample standard deviation
42: > alpha <- 0.015 # set the confidence level
43: > n_1 <- 45 # set the sample size
44: > htype = -1 # type of alternative -1 for <, 0 for !=, 1 for >
45: > s_1 = 31.44 # num items with characteristic in sample
46: >
47: > hypoth_test_sigma(H0, n_1, s_1, htype, alpha)
48:      H0_sigma      Sample Size      Samp Sigma
49:      "42.92"      "45"      "31.44"
50:      H1      sig level      crit low
51:      "sigma < 42.92"      "0.015"      "26.1639088624704"
52:      crit high      chi2 val      attained
53:      "n.a."      "23.6101270792276"      "0.00506267759089596"
54:      Decision
55:      "Reject"
56: > #
57: > #####
58: > ## C A S E: 3 ##
59: > #####

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60: > H0 <- 40.40      # sample standard deviation
61: > alpha <- 0.0675 # set the confidence level
62: > n_1 <- 63       # set the sample size
63: > htype = 1       # type of alternative -1 for <, 0 for !=, 1 for >
64: > s_1 = 47.09     # num items with characteristic in sample
65: >
66: > hypoth_test_sigma(H0, n_1, s_1, htype, alpha)
67:           H0_sigma      Sample Size      Samp Sigma
68:           "40.4"        "63"            "47.09"
69:           H1            sig level        crit low
70:           "sigma > 40.4" "0.0675"      "n.a."
71:           crit high    chi2 val         attained
72:           "79.3944875425841" "84.23378970199" "0.0316981670226851"
73:           Decision
74:           "Reject"
75: > #
76: > #####
77: > ## C A S E: 4 ##
78: > #####
79: > H0 <- 3.650      # sample standard deviation
80: > alpha <- 0.0625 # set the confidence level
81: > n_1 <- 14       # set the sample size
82: > htype = 1       # type of alternative -1 for <, 0 for !=, 1 for >
83: > s_1 = 4.47      # num items with characteristic in sample
84: > df <- n_1 - 1   # get the degrees of freedom
85: > df
86: [1] 13
87: > hypoth_test_sigma(H0, n_1, s_1, htype, alpha)
88:           H0_sigma      Sample Size      Samp Sigma
89:           "3.65"        "14"            "4.47"
90:           H1            sig level        crit low
91:           "sigma > 3.65" "0.0625"      "n.a."
92:           crit high    chi2 val         attained
93:           "21.563799256468" "19.4972189904297" "0.108475617791529"
94:           Decision
95:           "Do Not Reject"
96: > #
97: > #####
98: > ## C A S E: 5 ##
99: > #####
100: > H0 <- 22.00     # sample standard deviation
101: > alpha <- 0.0875 # set the confidence level
102: > n_1 <- 21       # set the sample size
103: > htype = 0       # type of alternative -1 for <, 0 for !=, 1 for >
104: > s_1 = 16.97     # num items with characteristic in sample
105: >
106: > hypoth_test_sigma(H0, n_1, s_1, htype, alpha)
107:           H0_sigma      Sample Size      Samp Sigma
108:           "22"          "21"            "16.97"
109:           H1            sig level        crit low
110:           "sigma != 22" "0.0875"      "10.586472005424"
111:           crit high    chi2 val         attained
112:           "31.9578055843268" "11.90000371900826" "0.161052723350894"
113:           Decision
114:           "Do Not Reject"
115: >

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