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1: > #This script was used to do the problems on
2: > #   a particular worksheet10
3: > #####
4: > ## C A S E:  1  ##
5: > #####
6: > H0 <- 0.36      # sample standard deviation
7: > alpha <- 0.0650 # set the confidence level
8: > n_1 <- 79      # set the sample size
9: > htype = 1      # type of alternative -1 for <, 0 for!=", 1 for >
10: > x_1 = 36      # num items with characteristic in sample
11: > # the long way to do the problem
12: > z <- qnorm( alpha, lower.tail=FALSE)
13: > z
14: [1] 1.514102
15: > s_1 <- sqrt( H0*(1-H0)/n_1)
16: > s_1
17: [1] 0.05400422
18: > # find the critical value
19: > cv_high = H0 + z*s_1
20: > cv_high
21: [1] 0.4417679
22: > phat <- x_1/n_1
23: > phat
24: [1] 0.4556962
25: > # or use the attained significance approach
26: > comp_z <- (phat - H0 )/ s_1
27: > comp_z
28: [1] 1.772013
29: > pnorm( comp_z, lower.tail=FALSE)
30: [1] 0.03819616
31: > #or we could do the problem the short way
32: > #   make sure function is in the environment
33: > source("../hypo_prop.R")
34: > hypoth_test_prop(H0, x_1, n_1, htype, alpha)
35:           H0_p           H1           x
36:           "0.36"           "prop > 0.36"           "36"
37:           n           sig level           s.d. of prop
38:           "79"           "0.065" "0.0540042192444491"
39:           z-score           crit low           crit_high
40:           "1.51410188761928"           "n.a." "0.441767890297426"
41:           samp prop           z           attained
42:           "0.455696202531646"           "1.77201344395849" "0.0381961627942126"
43:           decision
44:           "Reject"
45: >
46: > #####
47: > ## C A S E:  2  ##
48: > #####
49: > H0 <- 0.24      # sample standard deviation
50: > alpha <- 0.0175 # set the confidence level
51: > n_1 <- 83      # set the sample size
52: > htype = 0      # type of alternative -1 for <, 0 for!=", 1 for >
53: > x_1 = 31      # num items with characteristic in sample
54: >
55: > hypoth_test_prop(H0, x_1, n_1, htype, alpha)
56:           H0_p           H1           x
57:           "0.24"           "prop != 0.24"           "31"
58:           n           sig level           s.d. of prop
59:           "83"           "0.0175" "0.0468784637274493"
60:           z-score           crit low           crit_high

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61:      "2.37603084196121"      "0.12861532435982"      "0.35138467564018"
62:          samp prop                      z                      attained
63:      "0.373493975903614"      "2.8476610641455"      "0.00440418019488451"
64:          decision
65:          "Reject"
66: >
67: >
68: >
69: > #####
70: > ## C A S E:  3  ##
71: > #####
72: > H0 <- 0.73      # sample standard deviation
73: > alpha <- 0.0975 # set the confidence level
74: > n_1 <- 78      # set the sample size
75: > htype = -1     # type of alternative -1 for <, 0 for!=", 1 for >
76: > x_1 = 51      # num items with characteristic in sample
77: >
78: > hypoth_test_prop(H0, x_1, n_1, htype, alpha)
79:          H0_p                      H1                      x
80:          "0.73"                    "prop < 0.73"          "51"
81:          n                          sig level              s.d. of prop
82:          "78"                      "0.0975" "0.0502685097941353"
83:          z-score                    crit low              crit_high
84:          "1.29592884626043"        "0.664855588099255"  "n.a."
85:          samp prop                      z                      attained
86:          "0.653846153846154"        "-1.51494139105613"  "0.0648936235543204"
87:          decision
88:          "Reject"
89: >
90: >
91: >
92: > #####
93: > ## C A S E:  4  ##
94: > #####
95: > H0 <- 0.63      # sample standard deviation
96: > alpha <- 0.0075 # set the confidence level
97: > n_1 <- 80      # set the sample size
98: > htype = 1      # type of alternative -1 for <, 0 for!=", 1 for >
99: > x_1 = 60      # num items with characteristic in sample
100: >
101: > hypoth_test_prop(H0, x_1, n_1, htype, alpha)
102:          H0_p                      H1                      x
103:          "0.63"                    "prop > 0.63"          "60"
104:          n                          sig level              s.d. of prop
105:          "80"                      "0.0075" "0.0539791626463397"
106:          z-score                    crit low              crit_high
107:          "2.43237905858445"        "n.a." "0.761297784820881"
108:          samp prop                      z                      attained
109:          "0.75"                    "2.22308005750691"  "0.0131052010623692"
110:          decision
111:          "Do Not Reject"
112: >
113: >
114: >
115: > #####
116: > ## C A S E:  5  ##
117: > #####
118: > # need to generate the sample and then verify it
119: > source("../gnrnd4.R")
120: > gnrnd4(276559207,9653)

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121: style= 7   size= 93   seed= 27655   num digits= 0   alt_sign= 1
122: 5 6 9
123: 1 1 1 1 1 2 2 2 2 2 3 3 3 3 3 3 3 3 3
124: [1] "DONE "
125: > head( L1 )
126: [1] 3 3 1 2 2 3
127: > tail( L1 )
128: [1] 2 2 1 1 1 1
129: > # we need to get the sample size and the number of items
130: > # that have the desired characterisitic
131: > n_1 <- length( L1 );
132: > n_1
133: [1] 93
134: > t_hold <- table( L1 );
135: > t_hold
136: L1
137:  1  2  3
138: 27 21 45
139: > x_1 <- as.numeric( t_hold[ 3 ] )
140: > x_1
141: [1] 45
142: >
143: > H0 <- 0.45      # sample standard deviation
144: > alpha <- 0.0100 # set the confidence level
145: >
146: > htype = 1      # type of alternative -1 for <, 0 for!=", 1 for >
147: >
148: > hypoth_test_prop(H0, x_1, n_1, htype, alpha)
149:           H0_p           H1           x
150:           "0.45"         "prop > 0.45"         "45"
151:           n           sig level           s.d. of prop
152:           "93"         "0.01" "0.0515876954571596"
153:           z-score           crit low           crit_high
154:           "2.32634787404084"         "n.a."         "0.57001092565343"
155:           samp prop           z           attained
156:           "0.483870967741935"         "0.656570669454759"         "0.25572850673494"
157:           decision
158:           "Do Not Reject"
159: >
160: >
161: >
162: > #####
163: > ## C A S E:  6  ##
164: > #####
165: > # need to generate the sample and then verify it
166: > source("../gnrnd4.R")
167: > gnrnd4(292768307,5873)
168: style= 7   size= 84   seed= 29276   num digits= 0   alt_sign= 1
169: 7 8 5
170: 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 3 3 3 3 3
171: [1] "DONE "
172: > head( L1 )
173: [1] 1 2 3 3 2 3
174: > tail( L1 )
175: [1] 1 2 3 1 1 2
176: > # we need to get the sample size and the number of items
177: > # that have the desired characterisitic
178: > n_1 <- length( L1 );
179: > n_1
180: [1] 84

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181: > t_hold <- table( L1 );
182: > t_hold
183: L1
184:  1  2  3
185: 29 34 21
186: > x_1 <- as.numeric( t_hold[ 2 ] )
187: > x_1
188: [1] 34
189: >
190: > H0 <- 0.40      # sample standard deviation
191: > alpha <- 0.0175 # set the confidence level
192: >
193: > htype = 0      # type of alternative -1 for <, 0 for!=", 1 for >
194: >
195: > hypoth_test_prop(H0, x_1, n_1, htype, alpha)
196:           H0_p           H1           x
197:           "0.4"           "prop != 0.4"           "34"
198:           n           sig level           s.d. of prop
199:           "84"           "0.0175" "0.0534522483824849"
200:           z-score           crit low           crit_high
201:           "2.37603084196121" "0.272995809271045" "0.527004190728955"
202:           samp prop           z           attained
203:           "0.404761904761905" "0.0890870806374745" "0.929012704725711"
204:           decision
205:           "Do Not Reject"
206: >
207: > #####
208: > ## C A S E:  7  ##
209: > #####
210: > # need to generate the sample and then verify it
211: > source("../gnrnd4.R")
212: > gnrnd4(221348507,5963)
213: style= 7   size= 86   seed= 22134   num digits= 0   alt_sign= 1
214: 6 9 5
215: 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 3 3 3 3 3
216: [1] "DONE "
217: > head( L1 )
218: [1] 3 3 3 2 2 3
219: > tail( L1 )
220: [1] 1 1 2 3 3 1
221: > # we need to get the sample size and the number of items
222: > # that have the desired characterisitic
223: > n_1 <- length( L1 );
224: > n_1
225: [1] 86
226: > t_hold <- table( L1 );
227: > t_hold
228: L1
229:  1  2  3
230: 25 34 27
231: > x_1 <- as.numeric( t_hold[ 2 ] )
232: > x_1
233: [1] 34
234: >
235: > H0 <- 0.45      # sample standard deviation
236: > alpha <- 0.0050 # set the confidence level
237: >
238: > htype = -1      # type of alternative -1 for <, 0 for!=", 1 for >
239: >
240: > hypoth_test_prop(H0, x_1, n_1, htype, alpha)

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241:          H0_p          H1          x
242:          "0.45"          "prop < 0.45"          "34"
243:          n          sig level          s.d. of prop
244:          "86"          "0.005" "0.0536461273228943"
245:          z-score          crit low          crit_high
246:          "2.5758293035489" "0.311816733219774"          "n.a."
247:          samp prop          z          attained
248:          "0.395348837209302" "-1.01873453906102" "0.154164505266527"
249:          decision
250:          "Do Not Reject"
251: >
```