

2. 10 volunteers took tests for intelligence. Average score is 75. With significance level 95% between sample and population means, assuming that variance of population is not known

Scores: 65, 78, 88, 55, 48, 95, 66, 57, 79, 81

ans
—
> a = c(65, 78, 88, 55, 48, 95, 66, 57, 79, 81)
> t.test(a, mu = 75)

$t = -0.78303$, $df = 9$, $p\text{-value} = 0.4537$

alternative hypothesis: true mean not equal to 75

95% confidence interval:

60.22187 82.17813

Sample estimates:

mean of x

71.2

p-value with significance level of 95% < 0.05

Hence H_0 rejected.

Cholesterol level before and after medication

Before: 237 289 257 228 303 275 262 304 244 233
After: 194 240 230 186 265 222 242 281 240 212

Test claim $\mu_d > 0$ at $\alpha = 0.05$

ans

- > before = c(All values of 'before')
- > after = c(All values of 'after')
- > t.test(before, after, paired = TRUE, alternative = "greater", mu = 0)

Paired T-test

data: before and after

$t = 6.5594$, $df = 9$, $p\text{-value} = 5.202e-05$

alternative hypothesis: true difference in means is greater than 0

95 percent confidence level:

23.05711

Inf

sample estimates:

mean of differences: 32

Interpretation:

Reject null hypothesis because $p\text{-value}$ less than significance value