Question 1

A hypothesis test is to be performed for a population proportion. For the given sample data and null hypothesis, compute the value of the test statistic, z = p-p0/(squareroot)p0(1-p0)/n

Out of 69 observations, 67% were successes. H0: p = 0.54.

1.291

2.167

0.008

1.723

Question 2

Use the one-proportion z-test to perform the specified hypothesis test. Use the critical-value approach.

x = 610, n = 1500, H0: p≤ 0.40, Ha: p > 0.40, α = 0.01

 z = 0.53; critical value = 2.33; do not reject H0

 z = 0.62; critical value = 2.575; reject H0

 z = 0.62; critical value = 2.33; do not reject H0

 z = 0.53; critical value = 2.575; do not reject H0

Question 3

Provide an appropriate response.

Find the standardized test statistic t for a sample with n = 15, = 7.2, s = 0.8, and if Round your answer to three decimal places.

1.631

1.452

1.728

1.312

Question 4

Test the claim about the population mean μ at the level of significance α. Assume the population is normally distributed.

Claim μ = 24; α = 0.01. Sample statistics: = 25.2, s = 2.2, n = 12

t0 = ±3.106, standardized test statistic ≈ 1.890, fail to reject H0; There is not sufficient evidence to reject the claim.

t0 = ±3.106, standardized test statistic ≈ 1.890, reject H0; There is sufficient evidence to reject the claim.

t0 = 3.106, standardized test statistic ≈ 1.890, fail to reject H0; There is not sufficient evidence to reject the claim.

Question 5

Find the critical value X 2/0 and rejection region for the type of chi-square test with sample size n and level of significance α.

Right-tailed test,

n = 18, α = 0.01

χ20 = 35.718; χ2 > 35.718

χ20 = 27.587; χ2 > 27.587

χ20 = 30.181; χ2 > 30.181

χ20 = 33.409; χ2 > 33.409

Question 6

Find the critical values for t0 a sample with n = 12 and α = 0.01 if H0: μ = 20.

±2.201

±3.106

±1.796

±2.718

Question 7

Compute the standardized test statistic, X2, to test the claim σ2 ≥ 12.6 if n = 15, s2 = 10.5, and

12.823

11.667

23.891

8.713