|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *CO2 emissions from liquid fuel consumption (% of total)* | *CO2 intensity (kg per kg of oil equivalent energy use)* | *Energy use (kg of oil equivalent per capita)* | *Fuel imports (% of merchandise imports)* | *Pump price for diesel fuel (US$ per liter)* | *Log of energy use* |
| Mean | 54.97 | 2.05 | 2230.68 | 15.75 | 1.11 | 7.24 |
| Standard Error | 2.27 | 0.08 | 226.67 | 0.76 | 0.04 | 0.09 |
| Standard Deviation | 23.78 | 0.82 | 2377.31 | 7.92 | 0.44 | 0.99 |
| Count | 110 | 110 | 110 | 110 | 110 | 110 |

H0 : μ ≤ 50

H1 : μ > 50

This is a right-tailed test.

Test Statistic = (54.97 - 50) / (23.78 / sqrt(110)) = 2.193509117

Computing Critical Value:

Level of Significance = 95%

Degrees of Freedom = 110 – 1 = 109

Critical Value = 1.660

Result: Reject the Null hypothesis(Ho) since the test statistic is greater than the critical value.

H0 : μ ≥ 16

H1 : μ < 16

This is a left tailed test.

Test Statistic = (15.75 - 16) / (0.44 / sqrt(110)) = -0.333203955 🡪 0.333203955

Computing Critical Value:

Level of Significance = 95%

Degrees of Freedom = 110 – 1 = 109

Critical Value = 1.660

Result: Fail to reject the Null hypothesis(Ho) since the test statistic is less than the critical value.

**The true average log of energy use per capita is 7.090076836.**

H0 : μ = 7.090076836

H1 : μ ≠ 7.090076836

This is a two-tailed test.

Test Statistic = (7.24 - 7.090076836) / (0.99/ sqrt(110)) = 1.583398416

Computing Critical Value:

Level of Significance = 95%

Degrees of Freedom = 110 – 1 = 109

Critical Value = 1.660

Result: Fail to reject the Null hypothesis(Ho) since the test statistic is less than the critical value.