Step 1: Define null and alternative hypotheses

In testing the average minutes spent on the internet.

Null hypothesis states that mean internet usage time, μ is equals to 144. Alternative hypothesis states that the mean mean internet usage time, μ is unequal to 144. H0 : μ = 144 HA : μ ≠ 144

Step 2: Decide the significance level

Here we select α = 0.05.

In [5]:
```
print("The sample size for this problem is",len(mydata))
```

```
The sample size for this problem is 30
```

Step 3: Identify the test statistic

We do not know the population standard deviation and n = 30. So we use the t distribution and the tSTAT test statistic

Step 4: Calculate the p - value and test statistic

scipy.stats.ttest_1samp calculates the t test for the mean of one sample given the sample observations and the expected value in the null hypothesis. This function returns t statistic and the two-tailed p value.

In [6]:
```
# one sample t-test
# null hypothesis: expected value = 144
t_statistic, p_value = ttest_1samp(mydata, 144)
print('One sample t test \nt statistic: {0} p value: {1} '.format(t_statistic, p_value)
```

```
One sample t test
t statistic: [1.22467437] p value: [0.23055327]
```

In [8]:
```
## Step 5 Decide to reject or accept null hypothesis
```

In [9]:
```
# p_value < 0.05 => alternative hypothesis:

alpha_value = 0.05 # Level of significance
print('Level of significance: %.2f' %alpha_value)
if p_value < alpha_value:
    print('We have evidence to reject the null hypothesis since p value < Level of sign
else:
    print('We have no evidence to reject the null hypothesis since p value > Level of s

print ("Our one-sample t-test p-value=", p_value)
```

```
Level of significance: 0.05
We have no evidence to reject the null hypothesis since p value > Level of significanc
e
Our one-sample t-test p-value= [0.23055327]
```

In this example, p value is 0.23055327 and it is greater than 5% level of significance