Set 3: Q.No. 5 (I) Answer:

In [1]:
```
import numpy as np
from scipy import stats
from scipy.stats import norm
```

In [ ]:
```
# p = Population proportion share of market by Mozilla

## Null Hypothesis(H0) p ≥ 5% :Mozilla has more than or equal to 5% share of market.

## Alternate Hypothesis(Ha) p < 5% : Mozilla has a less than 5% share of market.
```

By applying One-Sample One-Tail z-test

In [6]:
```
z_score=(0.046-0.05)/(np.sqrt((0.05*(1-0.05))/2000))
z_score
```

Out[6]:
```
-0.820782681668124
```

Find the Probability assuming Null Hyposthesis (H0)

In [7]:
```
p_value=1-stats.norm.cdf(abs(z_score))
p_value
```

Out[7]:
```
0.20588503245107104
```

In [8]:
```
# Since the value of our test statistics is more than the critical value of Z.
#so we have insufficient evidence to reject the Null hypothesis (H0).
```

In [ ]:
```
# Therefore, we can conclude that Mozilla has more than or equal to 5% share of the market.
```