Question 1. There is an assumption that there is no significant difference between boys and girls with respect to intelligence. Tests are conducted on two groups and the following are the observations

	Mean	Standard Deviation	Size
Girls	89	4	50
Boys	82	9	120

Validate the claim with 5% LoS (Level of Significance).

```
In [ ]: solution 1:
```

```
In [1]: import pandas as pd
        import numpy as np
```

```
In [10]: z=(89-82)/np.sqrt(((4*4)/50)+((9*9)/100))
         z=(z*5)/100
         z
```

```
Out[10]: 0.32925230393425897
```

```
In [2]:
```

```
Out[2]: 9.6
```

```
In [11]: claim=1-(0.329252/100)
         claim
```

```
Out[11]: 0.99670748
```

Question 2. Analyze the below data and tell whether you can conclude that smoking causes cancer or not?

Category	Diagnosed as Cancer	Without Cancer	Total
Smokers	220	230	550
Non-Smokers	350	640	990
Total	680	910	1590

In [ ]: `solution 2`

here analyze data with total size and difference in cancer and without cancer

In [12]:
```python
d1=230-220
z1=((990*10)/550)
z1
```

Out[12]: 18.0

In [13]:
```python
d2=640-350
z2=((550*290)/990)
z2
```

Out[13]: 161.11111111111111

Here cancer value and without cancer value is not dependent on smoking alternatively so it is clear that cancer is not depend on smoking