

**Q6:**

**Answers**

6a:

```
Number of iteration: 4,  
Actual absolute error: 1.5947243525715749e-12,  
Value of square root of 2: 1.4142135623746899
```

6b:

```
Newton's method solution:  
y = 0.6931471805963518,  
absolute error = 1.2328316145726603e-10,  
iterations = 4
```

6c:

```
Newton's method solution:  
y = -0.499999999856274,  
absolute error = 4.3783199288327523e-11,  
iterations = 7
```

6d:

```
Newton's method solution:  
y = -1.7564312086263951,  
absolute error = 2.942091015256665e-14,  
iterations = 3
```

6e:

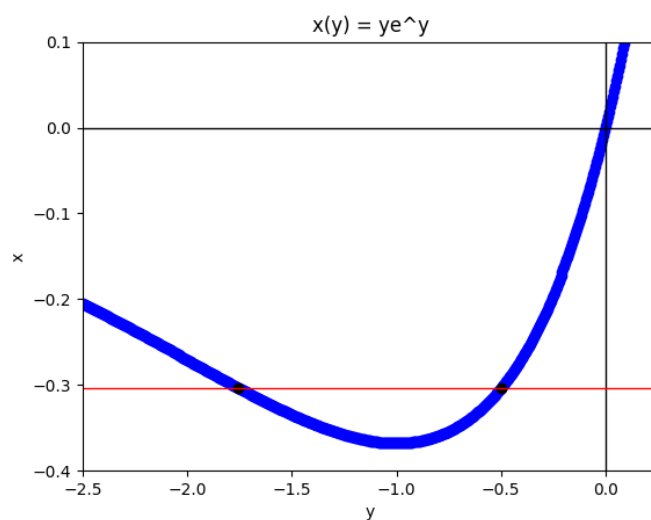


Fig 1: Graph for function,  $x(y) = ye^y$  with its solution marked by black contour.