

1. Running Newton's method:

```
i =  
22  
  
ans =  
0.64116643077930320512863651852324
```

2. Running the Modified Newton's method: at $p = 0.64116643$. Using the first and second derivative:

```
i =  
3  
  
ans =  
0.6411857445050227323393377286296
```

So we see that the Modified Newton's converges much faster than the regular Newton's method.

3. Using Newton's method:

```
i =  
4  
  
ans =  
4.5983520415341891789245837413861e-33
```

- 4.