

```
/*
```

This a program to find out the root of a function  $f = \exp(x) \cdot \ln(x) - x^2$  using Newton's method.

This program is created by Mohammad Sazzad Hossain.

```
*/
```

```
# include <iostream>
```

```
# include <math.h>
```

```
using namespace std;
```

```
int main (){
```

```
float x = 0, interval = 1e-6, tag = 0;
```

```
float f, df;
```

```
do {
```

```
f = exp (x) * log (x) - x * x;
```

```
df = exp (x) * (log(x) + 1 / x) - 2 * x;
```

```
if ((interval - f / df) < 1e-6 && (interval - f / df) > -1e-6)
```

```
tag = 1;
```

```
x += interval;
```

```
}while (tag == 0);
```

```
cout << x << endl;
```

```
return 0;
```

```
}
```