```
f[x_] := 2 - Exp[x]
fd[x_] = D[f[x], x]
FindRoot[f[x] == 0, {x, 0}]
```

$$-e^{x}$$

$$\{x \to 0.693147\}$$

```
x1 = 0.5 Exp[-0]
x2 = 0.5 Exp[-x1]
x3 = 0.5 Exp[-x2]
x4 = 0.5 Exp[-x3]
x5 = 0.5 Exp[-x4]
x6 = 0.5 Exp[-x5]
x7 = 0.5 Exp[-x6]
x8 = 0.5 Exp[-x7]
```

```
0.5

0.303265

0.369202

0.345643

0.353883

0.350979

0.351999

0.35164
```

```
y = 0;
Do[{x = y - f[y] / fd[y] // N, y = x, Print[y]}, 15]
```

```
1.

0.735759

0.694042

0.693148

0.693147

0.693147

0.693147

0.693147

0.693147

0.693147

0.693147

0.693147

0.693147

0.693147

0.693147
```

```
?? While
```

While[*test*, *body*] evaluates *test*, then *body*, repetitively, until *test* first fails to give True. ≫

```
Attributes[While] = {HoldAll, Protected}
```

```
y = 0; n = 1; While[n < 15, {x = y - f[y] / fd[y] // N, y = x, Print[y]}; n++]
```

```
1.
0.735759
0.694042
0.693148
0.693147
0.693147
0.693147
0.693147
0.693147
0.693147
0.693147
0.693147
0.693147
0.693147
0.693147
```