In[11]:=
```
ClearAll;
SecantMethod[x0_, x1_, m_] :=
 Module[{p0 = N[x0], p1 = N[x1], k = 0},
 While[k < m,
   p2 = p1 - (f[p1] * (p1 - p0)) / (f[p1] - f[p0]);
   p0 = p1;
   p1 = p2;
   k = k + 1;
   Print["Value at ", k, "th iteration is = ", NumberForm[p2, 16]];
 ];
 ];
```

In[13]:=
```
SecantMethod[0, 1, 8];
f[x_] := Cos[x] - x * Exp[x];
```

```
Value at 1th iteration is = 0.314665337800771
Value at 2th iteration is = 0.446728144591334
Value at 3th iteration is = 0.5317058606445456
Value at 4th iteration is = 0.5169044675673677
Value at 5th iteration is = 0.517747465271495
Value at 6th iteration is = 0.517757370754217
Value at 7th iteration is = 0.5177573636823997
Value at 8th iteration is = 0.5177573636824583
```

In[30]:=
```
ClearAll;
SecantMethod[0, 1, 8];
f[x_] := x^3 - 5 x + 1;
```

```
Value at 1th iteration is = 0.25
Value at 2th iteration is = 0.1864406779661017
Value at 3th iteration is = 0.2017362561791272
Value at 4th iteration is = 0.2016398528913041
Value at 5th iteration is = 0.2016396757212823
Value at 6th iteration is = 0.2016396757234047
Value at 7th iteration is = 0.2016396757234046
Value at 8th iteration is = 0.2016396757234046
```

In[42]:=
```
ClearAll;
SecantMethod[0.4, 0.48, 8];
f[x_] := Tan[Pi * x] - x - 6;
```

```
Value at 1th iteration is = 0.4208674107871754
Value at 2th iteration is = 0.4332027500739758
Value at 3th iteration is = 0.4620367139636616
Value at 4th iteration is = 0.4470431840922258
Value at 5th iteration is = 0.4501486990267677
Value at 6th iteration is = 0.4511207210146642
Value at 7th iteration is = 0.4510459109744275
Value at 8th iteration is = 0.4510472568084063
```

In[51]:=
```
ClearAll;
SecantMethod[-3, -2, 8];
f[x_] := x^3 - 2 x^2 - 3 * x - 1;
```

```
Value at 1th iteration is = -1.576923076923077
Value at 2th iteration is = -1.202573726541555
Value at 3th iteration is = -0.961308482244529
Value at 4th iteration is = -0.7856507771505577
Value at 5th iteration is = -0.6557534673194201
Value at 6th iteration is = -0.5348431115340252
Value at 7th iteration is = -0.2656827050159298
Value at 8th iteration is = -0.6687910732946651
```

In[60]:=
```
ClearAll;
SecantMethod[1, 2, 8];
f[x_] := x^7 - 3;
```

```
Value at 1th iteration is = 1.015748031496063
Value at 2th iteration is = 1.030365595191943
Value at 3th iteration is = 1.250478585013421
Value at 4th iteration is = 1.13998478481652
Value at 5th iteration is = 1.164126462702531
Value at 6th iteration is = 1.170395156813486
Value at 7th iteration is = 1.169923859430988
Value at 8th iteration is = 1.169930804483701
```

In[81]:=
```
ClearAll;
SecantMethod[0, 1, 8];
f[x_] := Exp[-x] - x;
```

```
Value at 1th iteration is = 0.6126998367802821

Value at 2th iteration is = 0.5638383891610742

Value at 3th iteration is = 0.5671703584197446

Value at 4th iteration is = 0.5671433066049633

Value at 5th iteration is = 0.5671432904097045

Value at 6th iteration is = 0.5671432904097839

Value at 7th iteration is = 0.5671432904097839
```

Power: Infinite expression $\frac{1}{0.}$ encountered.

Infinity: Indeterminate expression 0. ComplexInfinity encountered.

```
Value at 8th iteration is = Indeterminate
```