In[2]:=
```
L1 = {}; L2 = {};
```

In[3]:=
```
For[α = 0.264439, α < 1, α = α + 0.001,
 L = FindRoot[{((v1^α) * Cos[(α) * π / 2]) + ((Cos[2 v1] - Cos[v1]) / (Sin[2 v1] - Sin[v1])) *
       (v1^α) * Sin[(α) π / 2] - ((v2^α) * Cos[(α) * π / 2]) -
      ((Cos[2 v2] - Cos[v2]) / (Sin[2 v2] - Sin[v2])) * (v2^α) * Sin[(α) π / 2] == 0,
    ((v1^(α)) * Sin[(α) π / 2]) / (Sin[2 v1] - Sin[v1]) -
      ((v2^(α)) * Sin[(α) π / 2]) / (Sin[2 v2] - Sin[v2]) == 0}, {{v1, 0.9}, {v2, 5.0}}];
 L1 = Append[L1, {α, L[[1]]}];
 L2 = Append[L2, {α, L[[2]]}];]
```