

We compute the roots of fodd and feven as defined in Example 7.55 in <https://doi.org/10.1017/CBO9781139017329>.

```
In[203]:= l = 1/1; a = 1/2; max = 100 Pi;
```

```
In[204]:= fodd[ω_] := 1/l - ω Tan[a ω]
```

```
In[205]:= NSolveValues[fodd[ω] == 0 && 0 < ω < max, ω];
```

```
In[206]:= ExportString[%, "PythonExpression"]
```

```
Out[206]=
```

```
[1.3065423741888063, 6.584620042564173, 12.72324078413133, 18.95497141084159,
25.212026888550827, 31.47943871200974, 37.75207667597171, 44.027715273245924,
50.305234515871234, 56.58400976013825, 62.863665269180075, 69.14396152033731,
75.42473863153225, 81.70588581194674, 87.98732386888581, 94.26899469535412,
100.55085469176116, 106.83287050525826, 113.11501618708154,
119.39727124633525, 125.67961928691983, 131.9620470334776, 138.2445436227238,
144.52710007948, 150.80970892359036, 157.09236387110693, 163.3750596043836,
169.6577915932278, 175.940555954354, 182.2233493398995, 188.50616884822597,
194.78901195197662, 201.0718764396169, 207.3547603675994, 213.63766202096716,
219.92057988070806, 226.20351259654834, 232.48645896415636,
238.76941790594483, 245.0523884548256, 251.33536974040044, 257.61836097717236,
263.9013614544404, 270.1843705276043, 276.4673876106544, 282.7504121696627,
289.0334437171232, 295.3164818070137, 301.5995260304757, 307.8825760120226]
```

```
In[207]:= Length[%%]
```

```
Out[207]=
```

```
50
```

```
In[208]:= feven[ω_] := ω + Tan[a ω]/l
```

```
In[209]:= NSolveValues[feven[ω] == 0 && 0 < ω < max, ω];
```

```
In[210]:= ExportString[%,"PythonExpression"]
```

```
Out[210]=
```

```
[3.6731944063042516, 9.63168463569187, 15.834105369332415, 22.08165963594259,  
28.344864149599882, 34.61528107482927, 40.8896069332366, 47.166286620569686,  
53.44449274837544, 59.72374480763209, 66.00374471828925, 72.28429779401215,  
78.56527150544679, 84.84657251540163, 91.12813319239945, 97.40990333335034,  
103.69184489044686, 109.97392850297656, 116.25613115230225, 122.53843453744517,  
128.82082392555202, 135.1032873228242, 141.385814866322, 147.66839837091817,  
153.95103098711385, 160.23370693930983, 166.51642132329738, 172.7991699479058,  
179.08194920996812, 185.36475599470404, 191.64758759568977,  
197.93044165006492, 204.21331608569577, 210.49620907779823, 216.7791190131014,  
223.06204446006623, 229.34498414399775, 235.62793692613826,  
241.91090178601763, 248.19387780648378, 254.4768641609504, 260.75986010248783,  
267.0428649544535, 273.3258781024146, 279.6088989871598, 285.8919270986317,  
292.1749619706425, 298.45800317625714, 304.7410503237469, 311.02410305303397]
```