In[1]:=
```
(* Example 3-- nx=1.2, ny = 1.3, nz = 1.4,
what is n in the (1,1,0) direction? *)

(* After identifying n = 1.4 as a solution, Fresnel's Eq becomes this *)
Solve[1/n^2 == (1/2)/(n^2-1.2^2) + (1/2)/(n^2-1.3^2) , n]
```

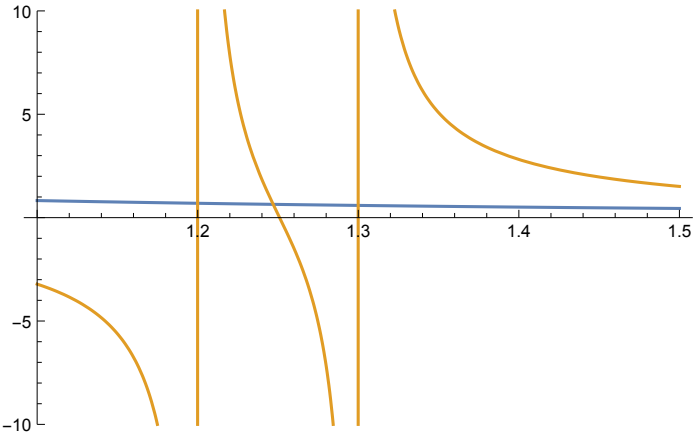
Solve::ratnz : Solve was unable to solve the system with inexact coefficients.

The answer was obtained by solving a corresponding exact system and numericizing the result. ≫

Out[1]=
```
{{n → -1.247}, {n → 1.247}}
```

In[2]:=
```
Plot[{1/n^2 , (1/2)/(n^2-1.2^2) + (1/2)/(n^2-1.3^2)},
 {n, 1.1, 1.5}, PlotRange → {-10, 10}]
```

Out[2]=




In[3]:=
```
FindRoot[1/n^2 == (1/2)/(n^2-1.2^2) + (1/2)/(n^2-1.3^2) , {n, 1.25}]
```

Out[3]=
```
{n → 1.247}
```

In[4]:=
```
(* Using the limit method to get both roots at once. Assume
 the direction is close to (1,1,0) but not quite exactly.
  For example, let u = 1/sqrt(20001) * (100,100,1). *)

Solve[1/n^2 == (10 000/20 001)/(n^2-1.2^2) +
   (10 000/20 001)/(n^2-1.3^2) + (1/20 001)/(n^2-1.4^2) , n]
```

Solve::ratnz : Solve was unable to solve the system with inexact coefficients.

The answer was obtained by solving a corresponding exact system and numericizing the result. ≫

Out[4]=
```
{{n → -1.39999}, {n → -1.247}, {n → 1.247}, {n → 1.39999}}
```