## 23c) Part ii)

### Take $\varepsilon = 1$.

```
In[ ]:= jl + nul ≤ -2 - 2 m0[jl] /. m0sub[jp] /. eps → 1 //. sub2p // Simplify
Out[ ]= 1 + m0[jp] ≤ 0
```

So $m_0(j_l)$ is the sole non-negative $m_0(j)$.

The basis point of Sect$(j_l)$ satisfies the condition in Lemma 4.15.

The highest point satisfying the condition :

```
In[ ]:= Clear[b1]
        jl + nul == -2 - 2 b1 //. sub2p // Simplify
        Solve[%, {b1}][[1]]
        2 jl + 3 (b1 + 1) == 2 jp - 3 (b1 + 1) /. % //. sub2p // Simplify
Out[ ]= 2 + 2 b1 == jp + nup
Out[ ]= {b1 → 1/2 × (-2 + jp + nup)}
Out[ ]= True
```

So the highest point is one step lower than the left boundary of the sector Sector$(j_+)$.

### Take $\varepsilon = -1$.

```
In[ ]:= -jr + nur ≤ -2 - 2 m0[jr] /. m0sub[jp] /. eps → -1 //. sub2p // Simplify
Out[ ]= 1 + m0[jp] ≤ 0
```

Only the sector Sect$(j_r)$ to be considered ,

Higest point on the left boundary of Sect$(j_r)$ that satisfies the condition in iv) in Lemma 4.15.

```
In[ ]:= Clear[b1]
        nur - jr == -2 - 2 b1 //. sub2p // Simplify
        Solve[%, {b1}][[1]]
        b = b1 + 1 /. %
Out[ ]= 2 + 2 b1 + jp == nup
Out[ ]= {b1 → 1/2 × (-2 - jp + nup)}
Out[ ]= 1 + 1/2 × (-2 - jp + nup)

In[ ]:= 2 jr - 3 b == 2 jp + 3 b //. sub2p // Simplify
Out[ ]= True
```

So we can go up to one step below $\text{Sect}(j_+)$.