

```
#####  
#####  
#####  
##### File "lar_ral_standard";
```

## The regular bisymmetrals lar, rap are derived from the exceptional bisymmetrals pal, par via the relation:

```
## gari(pal,lar)=par  
## gari(par,ral)=pal  
## gari(lar,ral)=id
```

## For r= 4,6,8,10 the present file gives:

```
## selar_r = eselar_r/ratiolar_r = coefficients of lar in the standard basis of Flex(Pa)  
## seral_r = eseral_r/ratiolar_r = coefficients of ral in the standard basis of Flex(Pa)
```

```
## For compactness, the sequences printed here are eselar_r and eseral_r,  
## after reduction to the common denominators ratiolar_r=ratiolar_r
```

```
#####  
#####  
#####  
ratiolar_4:=240: ratiolar_4:=240:  
ratiolar_6:=6048: ratiolar_6:=6048:  
ratiolar_8:=172800: ratiolar_8:=172800:  
ratiolar_10:= 15966720: ratiolar_10:= 15966720:
```

```
#####  
selar_4:=eselar_4*/ratiolar_4: seral_4:=eseral_4*/ratiolar_4:  
selar_6:=eselar_6*/ratiolar_6: seral_6:=eseral_6*/ratiolar_6:  
selar_8:=eselar_8*/ratiolar_8: seral_8:=eseral_8*/ratiolar_8:  
selar_10:=eselar_10*/ratiolar_10: seral_10:=eseral_10*/ratiolar_10:  
#####
```

```
eselar_4:= ## lprint(seral_4*ratiolar_4);  
[0, -1, 2, -1, 0, -1, -1, 1, 1, 0, 1, -2, 1, 0]: ##
```

```
eselar_4:= ## lprint(selar_4*ratiolar_4);  
[0, 1, -2, 1, 0, 1, 1, -1, -1, 0, -1, 2, -1, 0]: ##
```

```
eseral_6:= ## lprint(seral_6*ratiolar_6);  
[0, 1, -3, 1, 0, 4, 4, -3, -3, 1, 0, 4, 0, 1,  
-3, -3, -3, -3, -3, 4, 4, 4, 4, -3, -3, -3, -3, -3,  
1, 0, 4, 0, 1, -3, -3, 4, 4, 0, 1, -3, 1, 0,  
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,  
-2, -2, -2, -2, -2, -2, -2, -2, -2, -2,  
2, 2, 2, 2, 2, 2, 2, 2, 2,  
-1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1,  
0, -1, 3, -1, 0, -4, -4, 3, 3, -1, 0, -4, 0, -1,  
3, 3, 3, 3, 3, -4, -4, -4, -4, 3, 3, 3, 3, 3,  
-1, 0, -4, 0, -1, 3, 3, -4, -4, 0, -1, 3, -1, 0]: ##
```

```
eselar_6:= ## lprint(selar_6*ratiolar_6);  
[0, -1, 3, -1, 0, -4, -4, 3, 3, -1, 0, -4, 0, -1,  
3, 3, 3, 3, 3, -4, -4, -4, -4, 3, 3, 3, 3, 3,  
-1, 0, -4, 0, -1, 3, 3, -4, -4, 0, -1, 3, -1, 0,  
-1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1,  
2, 2, 2, 2, 2, 2, 2, 2, 2,  
-2, -2, -2, -2, -2, -2, -2, -2, -2,  
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,  
0, 1, -3, 1, 0, 4, 4, -3, -3, 1, 0, 4, 0, 1,  
-3, -3, -3, -3, -3, 4, 4, 4, 4, -3, -3, -3, -3, -3,  
1, 0, 4, 0, 1, -3, -3, 4, 4, 0, 1, -3, 1, 0]  
: ##
```

```
eseral_8:= ## lprint(seral_8*ratiolar_8);  
[0, -1, 4, -1, 0, -8, -5, 4, 4, -1, 0, -5, 0, -1, 10, 7, 4, 7, 4, -8, -5, -8, -5, 4, 4, 4, 4, -1, 0, -5,  
0, -1, 7, 4, -5, -5, 0, -1, 4, -1, 0, -8, -8, -2, -8, -5, -5, -8, 1, 1, -11, -8, -5, -8, -5, 10, 10, 4, 10,  
7, 10, 10, 4, 10, 7, -8, -8, -8, -8, -8, -8, -8, -8, -8, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, -1, 0,  
-5, 0, -1, 7, 4, -5, -5, 0, -1, 4, -1, 0, -11, -8, -5, -8, -5, 7, 4, 7, 4, -5, -5, -5, -5, -5, 0, -1, 4,  
-1, 0, -8, -5, 4, 4, -1, 0, -5, 0, -1, 4, 1, 10, 1, 4, -2, 1, 4, 4, 7, 10, -5, 10, 4, 4, 1, 10, 1, 4, -2, 1,  
-2, 1, 4, 4, 4, 4, 7, 10, -5, 10, 4, 7, 10, -5, -5, 10, 4, 10, 4, 4, -8, -8, -8, -8, -8, -5, -8, -5, -5,  
-11, -11, -5, -11, -8, -8, -11, -2, -11, -8, -8, -11, -2, -2, -11, -8, -11, -8, -8, 10, 10, 10, 10, 10, 10,
```



3, 3, 12, 12, 3, 3, 6, 6, 3, 3, 6, 6, -3, -3, 6, 6, 3, 3, 3, 3, 6, 6, -3, -3, -3, -3, 6, 6, 3, 3, 6, 6, 3, 3,  
3, 3, -1, -1, -4, -1, -4, 2, 2, -4, -4, -1, -4, 2, -4, -4, 2, 5, -4, 5, 2, 2, 2, 5, 5, -4, -4, -4, -4, -4,  
-1, -4, 2, -4, 5, 2, 2, 5, -4, -4, 2, -4, -1, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, 2,  
5, -4, 5, 2, 5, -4, 5, 2, 2, 2, 5, 5, -4, -4, 5, 5, 2, 2, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4,  
-4, -4, -1, -4, 2, -4, -4, 5, 2, 2, 5, -4, -4, 2, -4, -1, -4, -4, -4, -4, -4, 5, 2, 5, 2, 5, -4, 5, 2, -4  
, -4, 2, -4, -1, -4, -4, 2, 2, -4, -1, -4, -1, -1, 0, -1, 4, -1, 0, -8, -8, 4, 4, -1, 0, -8, 0, -4, 10, 10,  
10, 10, 10, -8, -8, -8, -8, 4, 4, 10, 4, 10, -1, 0, -8, 0, -4, 10, 10, -8, -8, 0, -4, 10, -4, 0, -8, -8, -8,  
-8, -8, -8, -8, -8, -8, -8, -8, -8, -8, 10, 10, 10, 10, 10, 10, 13, 4, 13, 10, -8, -8, -8, -8, -8, -8,  
-8, -8, -8, 4, 4, 10, 4, 10, -8, -8, 10, 4, 4, 10, -8, 10, 4, -1, 0, -8, 0, -4, 10, 10, -8, -8, 0, -4, 10,  
-4, 0, -8, -8, -8, -8, 10, 10, 13, 10, -8, -8, -8, -8, 0, -4, 10, -4, 0, -8, -8, 10, 10, -4, 0, -8,  
0, -1, 4, 4, 10, 4, 10, -8, -8, 10, 4, 4, 10, -8, 10, 4, 10, 4, 22, 4, 10, -8, -8, -8, -8, 10, 4, 22, 4,  
10, 4, 10, -8, 10, 4, 4, 10, -8, -8, 10, 4, 10, 4, 4, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8,  
-8,  
4, 10, 10, 13, 4, 13, 10, 10, 10, 10, 10, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8,  
-8, -8, -8, -8, -8, -8, -8, -8, -8, -8, 4, 4, 10, 4, 10, -8, -8, 10, 4, 4, 10, -8, 10, 4, 10, 4,  
22, 4, 10, -8, -8, -8, -8, 10, 4, 22, 4, 10, 4, 10, -8, 10, 4, 4, 10, -8, -8, 10, 4, 10, 4, 4, -1, 0, -8, 0,  
-4, 10, 10, -8, -8, 0, -4, 10, -4, 0, -8, -8, -8, -8, -8, 10, 10, 13, 10, -8, -8, -8, -8, -8, 0, -4, 10, -4,  
0, -8, -8, 10, 10, -4, 0, -8, 0, -1, 4, 10, -8, 10, 4, 4, 10, -8, -8, 10, 4, 10, 4, 4, -8, -8, -8, -8, -8,  
-8, -8, -8, -8, 10, 10, 13, 10, 4, 10, 13, 10, 10, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8, -8,  
-8, 0, -4, 10, -4, 0, -8, -8, 10, 10, -4, 0, -8, 0, -1, 10, 4, 10, 4, 4, -8, -8, -8, -8, 10, 10, 10, 10,  
10, -4, 0, -8, 0, -1, 4, 4, -8, -8, 0, -1, 4, -1, 0]  
: ##

eseral\_10:= ## lprint(seral\_10\*rational\_10);  
[0, 3, -15, 3, 0, 40, 18, -15, -15, 3, 0, 18, 0, 3, -70, -37, -15, -37, -15, 40, 18, 40, 18, -15, -15, -15, -15, -15,  
3, 0, 18, 0, 3, -37, -15, 18, 18, 0, 3, -15, 3, 0, 84, 62, 7, 62, 29, 29, 29, -4, -4, 73, 40, 18, 40, 18, -70, -48, -\n  
15, -48, -26, -70, -48, -15, -48, -26, 40, 29, 40, 29, 40, 29, 40, 29, -15, -15, -15, -15, -15, -15, -15, -15,  
-15, -15, -15, -15, -15, -15, 3, 0, 18, 0, 3, -37, -15, 18, 18, 0, 3, -15, 3, 0, 73, 40, 18, 40, 18, -37, -15, -37, -\n  
15, 18, 18, 18, 18, 0, 3, -15, 3, 0, 40, 18, -15, -15, 3, 0, 18, 0, 3, -70, -48, -48, -48, -37, 7, -15, -15, -15,  
-81, -70, 18, -70, -26, -37, -4, -48, -4, -4, 7, -15, 7, -15, -15, -15, -15, -15, -81, -70, 18, -70, -26, -37, -\n  
37, 18, 18, -70, -26, -37, -26, -15, 84, 62, 40, 62, 40, 29, 29, 29, 29, 73, 51, 18, 51, 29, 84, 73, 18, 73, 40, 40,  
40, 18, 18, 73, 40, 40, 40, 29, -70, -48, -48, -48, -37, -70, -48, -48, -48, -37, -70, -48, -48, -48, -37, -70, -48, -\n  
48, -48, -37, -70, -48, -48, -48, -37, 40, 29, 40, 29, 40, 29, 40, 29, 40, 29, 40, 29, 40, 29, 40, 29, 40, 29,  
40, 29, 40, 29, 40, 29, 40, 29, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -\n  
15, -15,  
-15, 3, 0, 18, 0, 3, -37, -15, 18, 18, 0, 3, -15, 3, 0, 73, 40, 18, 40, 18, -37, -15, -37, -15, 18, 18, 18, 18, 0,  
3, -15, 3, 0, 40, 18, -15, -15, 3, 0, 18, 0, 3, -81, -70, 18, -70, -26, -37, -37, 18, 18, -70, -26, -37, -26, -15, 73,  
51, 18, 51, 29, 73, 40, 40, 40, 29, -37, -26, -37, -26, -48, -37, -37, -26, -48, -37, 18, 18, 18, 18, 29, 29, 18,  
29, 18, 18, 29, 18, 29, 0, 3, -15, 3, 0, 40, 18, -15, -15, 3, 0, 18, 0, 3, -70, -26, -37, -26, -15, 40, 18, 40, 29, -\n  
15, -15, -37, -15, -37, 3, 0, 18, 0, 3, -26, -15, 18, 29, 0, 3, -15, 3, 0, 40, 18, 62, 18, 29, -4, 18, 18, 18, 62, 73,  
-26, 73, 29, 7, -26, 62, -26, -4, 18, -4, 18, 18, 18, 18, 18, 62, 73, -26, 73, 29, 18, 40, -26, 73, 29,  
40, 29, 18, 29, 18, 18, 18, 29, 51, -26, -26, 62, 62, 7, 62, 29, -4, -37, 51, -37, -15, -4, -37, 51, -37, -15, 18,  
40, 18, 40, 18, 40, 18, 40, 18, 40, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, 73, 84, -15, 84, 40, 29,  
51, -15, -15, 84, 40, 51, 40, 29, 40, 40, -15, 40, 7, 29, 51, 29, 51, -15, -15, -15, -15, -15, 84, 40, 51, 40, 29, 40,  
7, 51, 51, 40, 29, 7, 29, 18, -70, -59, -48, -59, -48, -37, -59, -15, -15, -92, -81, -26, -81, -48, -37, -15, -48, -15  
, -15, -37, -59, -37, -59, -15, -15, -15, -15, -92, -81, -26, -81, -48, -48, -26, -26, -81, -48, -48, -48, -\n  
37, -70, -59, -48, -59, -48, -37, -59, -15, -15, -92, -81, -26, -81, -48, -37, -15, -48, -15, -15, -37, -59, -37, -59,  
-15, -15, -15, -15, -15, -92, -81, -26, -81, -48, -48, -48, -26, -26, -81, -48, -48, -48, -37, 84, 84, 40, 84, 62, 73,  
84, 29, 29, 95, 73, 73, 73, 62, 84, 95, 18, 95, 62, 84, 95, 18, 18, 95, 62, 95, 62, 62, 84, 51, 106, 51, 62, 40, 51,  
62, 62, 95, 106, 7, 106, 62, 84, 95, 18, 95, 62, 84, 95, 18, 18, 95, 62, 95, 62, 62, 84, 84, 40, 84, 62, 73, 84, 29,  
29, 95, 73, 73, 73, 62, -70, -70, -48, -70, -59, -70, -48, -70, -59, -70, -48, -70, -59, -70, -48, -70, -48, -70,  
-59, -70, -48, -70, -59, -70, -48, -70, -48, -70, -59, -70, -48, -70, -59, -70, -48, -70, -59, -70, -48, -70, -48  
, -70, -59, -70, -48, -70, -59, -70, -48, -70, -59, -70, -48, -70, -59, -70, -48, -70, -59, -70, -48, -70, -59, -70, -\n  
70, -48, -70, -59, 40,  
40,  
40,  
-15,  
, -15, -\n  
15, -15,  
-15,  
-15,  
, -15, -\n  
15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, -15, 3, 0, 18, 0, 3, -37, -15, 18, 0, 3, -15, 3, 0  
, 73, 40, 18, 40, 18, -37, -15, -37, -15, 18, 18, 18, 18, 18, 18, 0, 3, -15, 3, 0, 40, 18, -15, -15, 3, 0, 18, 0, 3, -81,  
-70, 18, -70, -26, -37, -37, 18, 18, -70, -26, -37, -26, -15, 73, 51, 18, 51, 29, 73, 40, 40, 40, 29, -37, -26, -37, -\n  
26, -48, -37, -37, -26, -48, -37, 18, 18, 18, 18, 18, 29, 29, 18, 29, 18, 18, 29, 18, 29, 0, 3, -15, 3, 0, 40, 18, -15  
, -15, 3, 0, 18, 0, 3, -70, -26, -37, -26, -15, 40, 18, 40, 29, -15, -15, -37, -15, -37, 3, 0, 18, 0, 3, -26, -15, 18,  
29, 0, 3, -15, 3, 0, 73, 84, -15, 84, 40, 29, 51, -15, -15, 84, 40, 51, 40, 29, 40, 40, -15, 40, 7, 29, 51, 29, 51, -\n  
15, -15, -15, -15, -15, 84, 40, 51, 40, 29, 40, 51, 40, 29, 7, 29, 18, -81, -70, -15, -70, -37, -37, -15,  
-15, -70, -37, -37, -37, -26, -81, -70, -15, -70, -37, -37, -37, -15, -15, -70, -37, -37, -37, -26, 73, 51, 51, 40  
, 73, 40, 73, 40, 40, 73, 84, -15, 84, 40, 73, 40, 73, 40, 40, 73, 51, 51, 51, 40, -37, -26, -37, -26, -48, -37, -37,  
-26, -48, -37, -4, 7, -4, 7, -48, -37, -37, -26, -37, -26, -48, -37, -4, 7, -48, -37, -37, -26, 18, 18, 18, 18, 18, 29







































