EX $p = 3$, $n = 4$ $\hspace{6cm}$ $p = 2$, $n = 4$

	$\beta^{(4)}$	$\beta^{(3,1)}$	$\beta^{(2,2)}$	$\beta^{(2,1^2)}$
$\chi^{(4)}$	1			
$\chi^{(3,1)}$		1		
$\chi^{(2,2)}$	1		1	
$\chi^{(2,1^2)}$				1
$\chi^{(1^4)}$			1	

	$\beta^{(4)}$	$\beta^{(3,1)}$
$\chi^{(4)}$	1	
$\chi^{(3,1)}$	1	1
$\chi^{(2,2)}$		1
$\chi^{(2,1^2)}$	1	1
$\chi^{(1^4)}$	1	

EX $p = 2,\ n = 4$ $p = 2,\ n = 6$

	$\beta^{(4)}$	$\beta^{(3,1)}$
$\chi^{(4)}$	1	
$\chi^{(3,1)}$	1	1
$\chi^{(2,2)}$		1
$\chi^{(2,1^2)}$	1	1
$\chi^{(1^4)}$	1	

	$\beta^{(6)}$	$\beta^{(5,1)}$	$\beta^{(4,2)}$	$\beta^{(3,2,1)}$
$\chi^{(6)}$	1			
$\chi^{(5,1)}$	1	1		
$\chi^{(4,2)}$	1	1	1	
$\chi^{(4,1^2)}$	2	1	1	
$\chi^{(3,3)}$	1		1	
$\chi^{(3,2,1)}$				1
$\chi^{(3,1^3)}$	2	1	1	
$\chi^{(2^3)}$	1	1	1	
$\chi^{(2^2,1^2)}$	1	1		
$\chi^{(1^4)}$	1			

```
  1
  1 1
    1 1
    1 1 1
    1   1 1
    1 1 1   1 1
    1 1     1 1 1
    1         1 1 1
    1         1 1 1 1
    1 1     1 1 1   1 1
    1 1 1   1 1     1 1 1
    1   1 1     1     1 1 1
    1   1 1     1       1 1 1
    1 1 1         1 1 1   1 1 1
    1 1             1 1     1 1 1
    1                 1 1 1 1 1 1
    1                 1 1 1   1 1
    1 1             1 1 1 1 1   1 1
    1 1 1         1 1 1 1     1 1 1
    1   1 1       1 1       1 1 1 1
    1   1 1 1   1 1 1         1 1 1
    1 1 1   1 1 1 1 1       1 1 1 1
    1 1         1 1 1 1 1     1 1 1 1
    1             1 1 1 1       1 1 1 1
    1             1 1 1           1 1 1 1
    1 1         1 1 1 1         1 1 1   1 1
    1 1 1     1 1 1 1 1           1 1 1 1
    1   1 1 1     1 1 1         1 1   1 1 1
    1   1 1         1 1 1       1 1     1 1 1
    1 1 1             1 1         1 1 1   1 1 1
    1 1                 1 1 1       1 1     1 1 1
    1                       1 1 1     1 1 1     1 1
    1                         1 1       1     1   1 (1)
```

Abacus representation

$p = 2$, weight $w = 2$, $n = 5$.
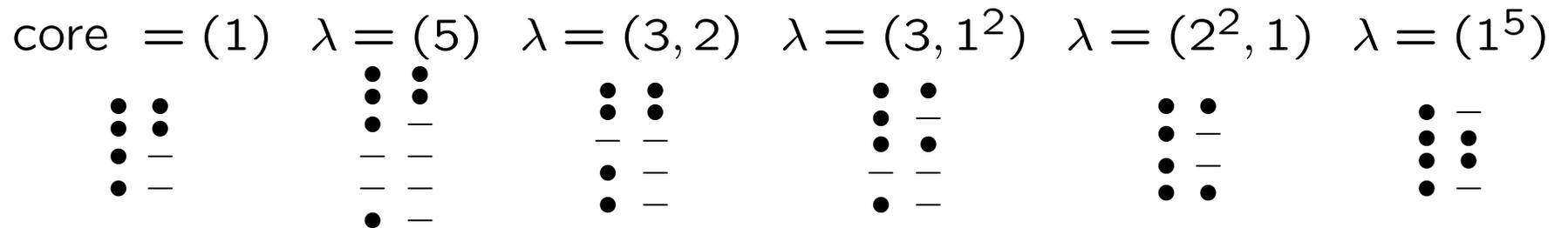
core $= (1)$ $\lambda = (5)$ $\lambda = (3, 2)$ $\lambda = (3, 1^2)$ $\lambda = (2^2, 1)$ $\lambda = (1^5)$

EX $p = 2$, $w = 2$.

Move 2 beads to the right = swap runners.

Core $\kappa_1 = (1)$, $n_1 = 5$ Core $\kappa_2 = (2,1)$, $n_2 = 7$

$\kappa_1 = (1)$ $\lambda = (5)$ $\lambda = (3,2)$ $\lambda = (3,1^2)$ $\lambda = (2^2,1)$ $\lambda = (1^5)$
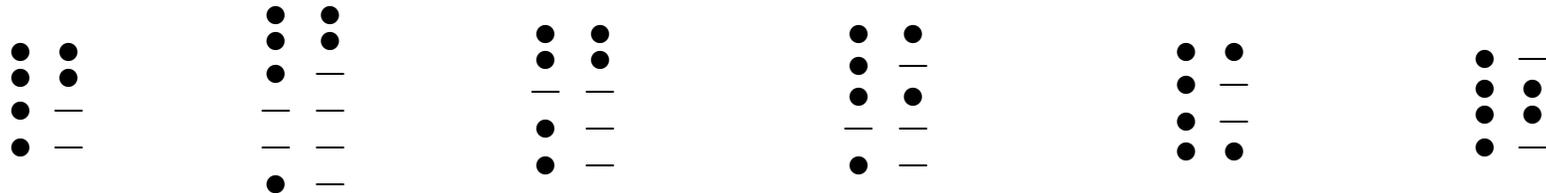
$\kappa_2 = (2,1)$ $\lambda = (6,1)$ $\lambda = (4,3)$ $\lambda = (4,1^3)$ $\lambda = (2^3,1)$ $\lambda = (2,1^5)$
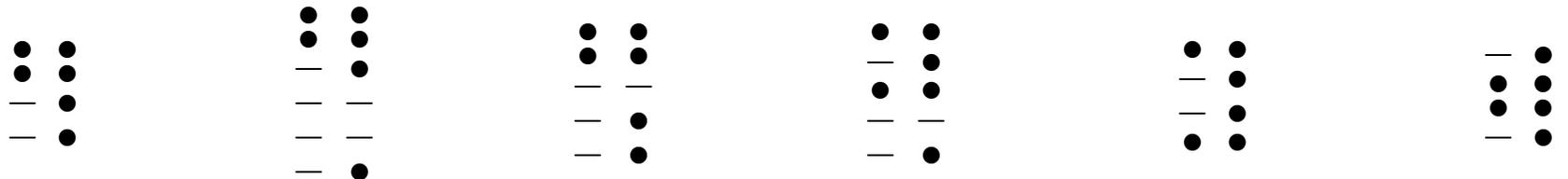
EX $p = 2$, $w = 2$.   Partitions in order.

Move 1 bead to the right $\neq$ swapping runners.

Core $\kappa_1 = \emptyset$, $n_1 = 4$.   core $\kappa_2 = (1)$, $n_2 = 5$.

$\kappa_1 = \emptyset$ $\lambda = (4)$ $\lambda = (3,1)$ $\lambda = (2^2)$ $\lambda = (2,1^2)$ $\lambda = (1^4)$

$\kappa_2 = (1)$ $\lambda = (5)$ $\lambda = (3,2)$ $\lambda = (3,1^2)$ $\lambda = (2^2,1)$ $\lambda = (1^5)$