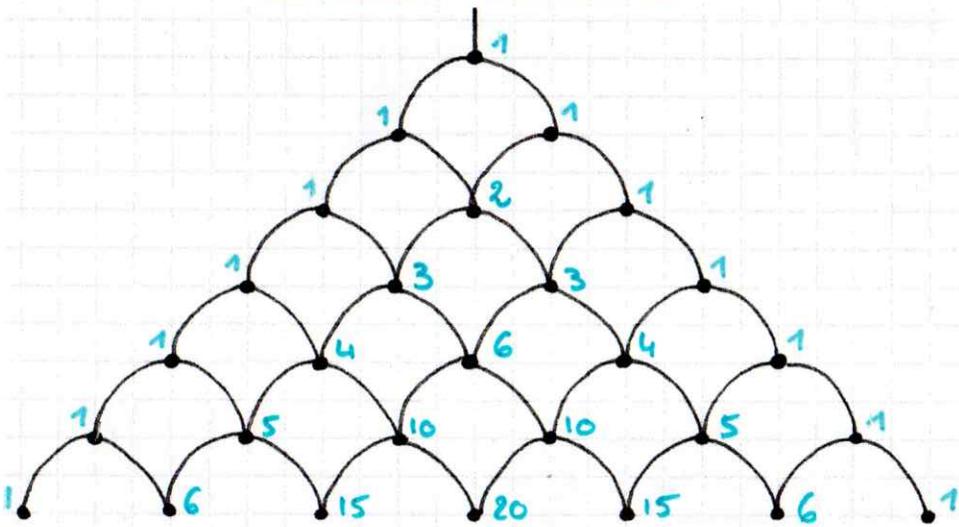


# Combinatoire

Planche de Galton



Triangle de Pascal

$n \backslash k$	0	1	2	3	4	5	6	7
0	1							
1	1	1						
2	1	2	1					
3	1	3	3	1				
4	1	4	6	4	1			
5	1	5	10	10	5	1		
6	1	6	15	20	15	6	1	
7	1	7	21	35	35	21	7	1

$$\begin{matrix} \star \\ \star \end{matrix} \binom{n}{0} = \binom{n}{n} = 1$$

$$\begin{matrix} \star \\ \star \end{matrix} \binom{n}{1} = \binom{n}{n-1} = n$$

$$\begin{matrix} \star \\ \star \end{matrix} \binom{n}{k} = \binom{n}{n-k}$$

$$\begin{matrix} \star \\ \star \end{matrix} \binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$

nombre de k-éléments d'un ensemble à n-éléments:

$$\binom{n}{k} = \frac{n!}{(n-k)! k!}$$