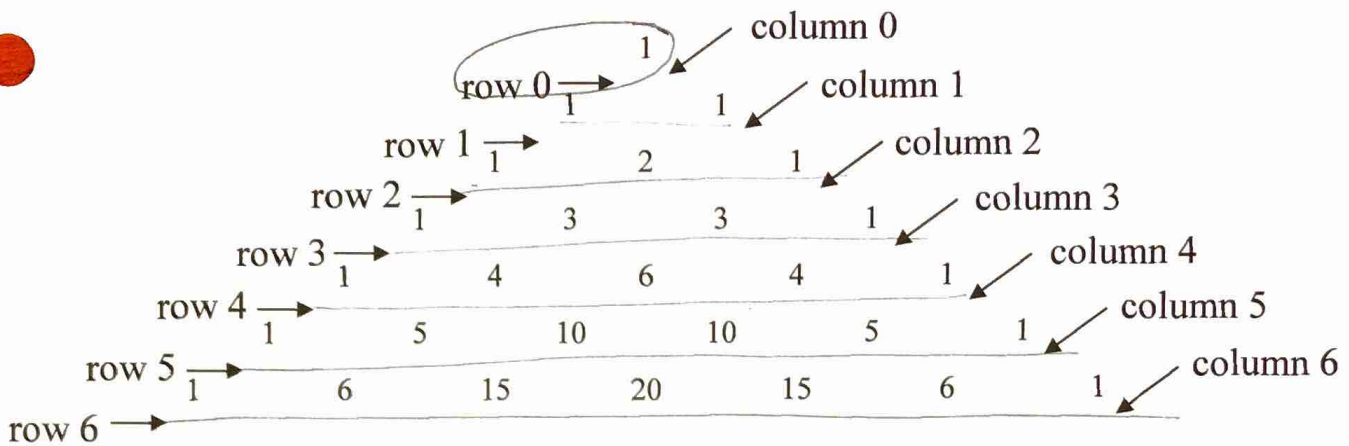


Pascal's Triangle



Expanding binomials:

$$\begin{aligned}
 (x+y)^2 &= 1a^2b^0 + 2a^1b^1 + 1a^0b^2 \\
 \begin{matrix} \uparrow & \uparrow \\ a & b \end{matrix} & \quad \text{row 2} \\
 &= 1x^2 + 2xy + 1y^2 \\
 &= \boxed{x^2 + 2xy + y^2} \\
 &1, 2, 1
 \end{aligned}$$

$$\begin{aligned}
 (x+y)^3 &= 1a^3b^0 + 3a^2b^1 + 3a^1b^2 + 1a^0b^3 \\
 \begin{matrix} a \rightarrow x \\ b \rightarrow y \end{matrix} & \quad \text{row 3} \\
 &= 1x^3 + 3x^2y + 3xy^2 + 1y^3 \\
 &= \boxed{x^3 + 3x^2y + 3xy^2 + y^3} \\
 &1, 3, 3, 1
 \end{aligned}$$

$$(x+y)^5 = x^5 + 5x^4y + 10x^3y^2 + 10x^2y^3 + 5xy^4 + y^5$$

$$\begin{aligned}
 (2x-3)^3 &= 1a^3b^0 + 3a^2b^1 + 3a^1b^2 + 1a^0b^3 \\
 \begin{matrix} a \rightarrow 2x \\ b \rightarrow -3 \end{matrix} & \\
 &= 1(2x)^3 + 3(2x)^2(-3) + 3(2x)(-3)^2 + 1(-3)^3 \\
 &= \boxed{8x^3 - 36x^2 + 54x - 27} \\
 &1, 3, 3, 1
 \end{aligned}$$