

$$a*(b+c)=a*b+a*c$$

$$(a+b)^2=(a+b)*(a+b)=(a+b)*a + (a+b)*b=a*a+a*b+b*a+b*b=a^2+2ab+b^2$$

$$(a+b)^2=a^2+2ab+b^2$$

$$(a+b)^3=a^3+3a^2b+3ab^2+b^3$$

$$(a+b)^4=a^4+4a^3b+6a^2b^2+4ab^3+b^4$$

$$(a+b)^1=1*a+1*b$$

$$(a+b)^2=1*a^2+2*ab+1*b^2$$

$$(a+b)^3=1*a^3+3*a^2b+3*ab^2+1*b^3$$

$$(a+b)^4=1*a^4+4*a^3b+6*a^2b^2+4*ab^3+1*b^4$$

$$(a+b)^{10}=C(10,0)*a^{10}+C(10,1)*a^9b+C(10,2)*a^8b^2+C(10,3)*a^7b^3+ \dots +C(10,10)*b^{10}$$

$$2^{10}=C(10,0)+C(10,1)+C(10,2)+C(10,3)+\dots+C(10,10)$$

$$a^3b^1$$

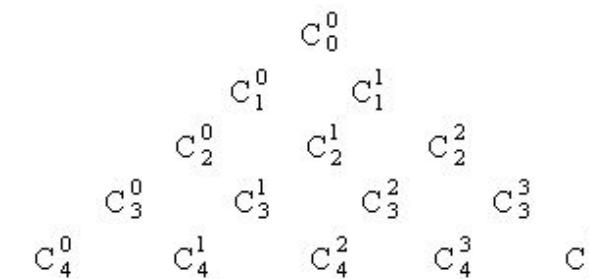
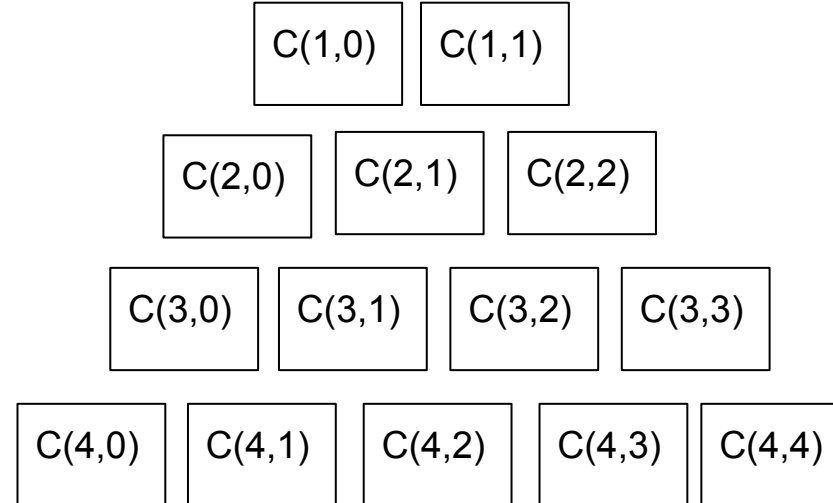
$$(a+b)^4=(a+b)*(a+b)*(a+b)*(a+b)$$

$$a a a b = a^3b$$

$$a b a a = a^3b \quad C(4,3)=\frac{4*3*2}{3!} = C(4,1)$$

$$C(4,0)=\frac{4!}{4!*0!}=1$$

$$(a+b)^{107} = C(107,4)a^{103}b^4$$



$$(a+b+c+\dots+d)^k = P(k, k_1, k_2, \dots, k_t)^*$$

$$C(n, k) = C(n, n-k)$$

$$a*b+b*a = 1*a*b+1*b*a = ab*(1+1) = 2ab$$

