Some Important Points.

(1) **Pascal's Triangle:**

1					$(x+y)^0$	
1	1				$(x+y)^1$	
1	2		1		$(x+y)^2$	
1	3		3	1	$(x+y)^3$	
1	4	6	4	1	$(x+y)^4$	
1	5	10	10	5	1	$(x+y)^5$

Pascal's triangle gives the direct binomial coefficients.

Example: $(x+y)^4 = 1x^4 + 4x^3y + 6x^2y^2 + 4xy^3 + y^4$

(2) **Method for finding terms free from radical or rational terms in the expansion of** $(a^{1/p} + b^{1/q})^N \forall a, b \in$ **prime numbers:** Find the general term

$$T_{r+1} = {}^N C_r (a^{1/p})^{N-r} (b^{1/q})^r = {}^N C_r \, a^{\frac{N-r}{p}} . b^{\frac{r}{q}}$$

Putting the values of $0 \le r \le N$, when indices of a and b are integers.

Note: Number of irrational terms = Total terms – Number of rational terms.