Math

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1 Pascal's Triangle

Pascal's triangle (Also known as the binomial theorem) follow the pattern

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
.....

This can be used to apply in expanding $(x+y)^n$

$$(x+y)^2 = x^2 + \underline{2}xy + y^2$$

$$(x+y)^3 = x^3 + \underline{3}x^2y + \underline{3}xy^2 + y^3$$

$$(x+y)^4 = x^4 + \underline{4}x^3y + \underline{6}x^2y^2 + \underline{4}xy^3 + y^4$$

This makes it faster for expanding binomials