## Math

Joshua Liu

December 2019

## 1 Pascal's Triangle

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

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

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

This makes it faster for expanding binomials