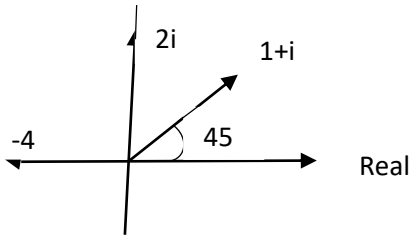
Complex Number Z^n



$1+i = \sqrt{2}\,(\cos 45^0 + i\sin 45^0)$

$(1+i)^2 = 2i = 2(\cos 90^0 + i\sin 90^0)$

$(1+i)^4 = (2i)^2 = -4$

$= 4(\cos 180^0 + i\sin 180^0)$

$[r(\cos\alpha + i\sin\alpha)]$

$= r^n(\cos n\alpha + i\sin n\alpha)$

$\{2(\cos 30^0 + i\sin 30^0)\}^3 =$

$2^3\,(\cos 90^0 + i\sin 90^0) = 8i$