



COMPLEX NUMBERS

1	Write the value of $i + i^{10} + i^{20} + i^{30}$
2	Write the additive Inverse of $6i - i\sqrt{-49}$
3	Write the multiplicative Inverse of $1 + 4\sqrt{3}i$
4	Write the conjugate of $\frac{2-i}{(1-2i)^2}$
5	Write in the form of $a + ib$ : $\frac{1}{-2 + \sqrt{-3}}$
6	The real value of 'a' for which $3i^3 - 2ai^2 + (1-a)i$ is real is _____.
7	The value of $(-\sqrt{-1})^{4n-3}$ , when $n \in \mathbb{N}$ , is _____.
8	The value of $\sqrt{-25} \times \sqrt{-9}$ is _____.
9.	The value of $1 + i^2 + i^4 + i^6 + \dots + i^{20}$ is _____.
10.	Find x and y if $(x + iy)(2 - 3i) = 4 + i$ .
11.	If n is any positive integer, write value of $\frac{i^{4n+1} - i^{4n-1}}{2}$
12.	If $x + iy = \sqrt{\frac{1+i}{1-i}}$ prove that $x^2 + y^2 = 1$

13.	Find real value of $\theta$ such that, $\frac{1+i \cos \theta}{1-2i \cos \theta}$ is a real number.
14.	If $(1+i)(1+2i)(1+3i)\dots\dots(1+ni) = x + iy$ . Show, $2.5.10\dots\dots(1+n^2) = x^2 + y^2$
15.	If $\left(\frac{2+2i}{2-2i}\right)^n = 1$ , find the least positive integral value of n

TVM'S