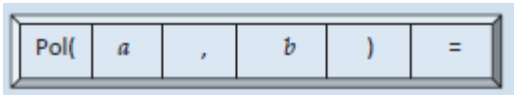
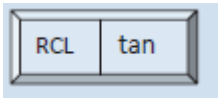
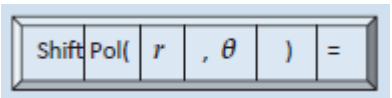
SUVA SANGAM COLLEGE
YEAR 13
MATHEMATICS
WORKSHEET 3

Strand 1	Complex Numbers
Sub-Strand	Geometrical Representation and Properties.
Content Learning Outcome	Represent rectangular form on complex plane, find modulus and argument of complex numbers and converting from rectangular to polar form and vice-versa.
Reference from Text	Pg 14 - 20

Questions

	CONCEPT IN BRIEF: To represent rectangular form $(z = a + bi)$ on a Complex plane, the $x-axis$ shows the **real part**(a) and the $y-axis$ shows the **imaginary part** (b)
1.	If , plot z and $\bar{z}$ on an Argand diagram.
	CONCEPT IN BRIEF: To find the **modulus**$(\|z\|)$ and **argument**$(Arg(z))$ of a complex number, $z = a + bi$ using the **Casio *Fx-82MS*** calculator: ➢ $\|z\| = r$ Press  ➢ $Arg\,(z) = \theta$ Press 
2.	Given a complex number, ; (a) Find the **modulus** and the **argument** of z (b) Show that $z\bar{z} = \|z\|^2$
	CONCEPT IN BRIEF: ➢ The complex number $z = a + bi$, when expressed in polar form gives $z = r(Cos\theta + iSin\theta)$ or $rCis\,\theta$ where r is the $\|z\|$ and θ is the $Arg(z)$. ➢ To convert polar form $(z = rCis\,\theta)$ to rectangular form $(z = a + bi)$, using the calculator: • To find a Press 

	• To find b Press 
3.	(a) Convert the complex number $z = -1 + i$ to **polar form**. (b) Convert the complex number $z = 2(\text{Cos}\frac{\pi}{6} + i\text{Sin}\frac{\pi}{6})$ to **rectangular form.**