SUVA SANGAM COLLEGE

YEAR 13

MATHEMATICS

WORKSHEET 2

Strand 1	Complex Numbers
Sub-Strand	Manipulation of Complex Numbers
Content Learning Outcome	Add, subtract, multiply and divide complex numbers.
Reference from Text	Pg 8 - 11

Questions

1	**CONCEPT IN BRIEF:**
	In addition and subtraction of complex numbers, the **real part** are added together or subtracted, and so are the **imaginary part**.
	Given that $z = 3 + i$ and $w = -1 + 2i$, evaluate the following; (a) $z + w$ (b) $w - z$
2	**CONCEPT IN BRIEF**: Given two complex numbers $z_1 = a + bi$ and $z_2 = x + yi$, the following holds true for Multiplication; $$Z_1 \times Z_2$$ $$= (a + bi)(x + yi)$$ $$= a(x + yi) + bi(x + yi)$$
	Simplify: (a) $(-1 - 3i)(1 + i)$ (b) $(1 - i)^2$
3	**CONCEPT IN BRIEF**: When dividing two complex numbers, multiply the numerator and denominator by the conjugate of the denominator
	(a) Simplify: $\dfrac{3+2i}{1-i}$ $\qquad$ (b) Express $\dfrac{6-5i}{5+4i} + 5$ in the form $a + bi$