SUVA SANGAM COLLEGE

YEAR 12

MATHEMATICS

WORKSHEET 4

Strand 1	Social Mathematics
Sub-Strand	1.3 indices and logarithms
Content Learning Outcome	• State the laws of Indices • Simplify using the laws of indices
Reference from Text	Pg. 20 to 25

Questions

No.	**CONCEPT IN BRIEF**: Laws of indices reference page 21(text book) Index is the power or exponent which is raised to a number or a variable. The laws of indices enable expressions involving powers to be manipulated more efficiently than writing them out in full. a) rewrite expression with the base b) use the law $x^a \div x^b = x^{a-b}$
1.	Simplify $\frac{8^x}{2^{3x}}$
	CONCEPT IN BRIEF: a) Rewrite the expression with the smallest base b) use the law $x^a \times x^b = x^{a+b}$ c) use the law $x^a \div x^b = x^{a-b}$
2.	Simplify a) $\frac{2^{3n} \times 4^n}{8^{2n}}$ b) $\frac{27^{x+1} \times 3}{3^{3x+3}}$
	CONCEPT IN BRIEF: a) Square root means to raise to the power half: b) Use the laws of indices to simplify
3.	Simplify $\sqrt{\frac{3a^{-2}b^2}{12a^2b}}$