TRIG FORMULA SHEET FOR UNIT 12 CELEBRATION OF KNOWLEDGE

Name	Formula
Arithmetic Sequences:	$a_n = a_1 + (n-1)d$
Arithmetic Sum:	$S_n = \frac{n}{2}(a_1 + a_n)$ $S_n = \frac{n}{2}(2a_1 + (n-1)d)$
Geometric Sequences	$a_n = a_1 \cdot r^{(n-1)}$
Geometric Sum:	$S_n = \frac{a_1(1-r^n)}{1-r}$
Infinite Series:	$S_\infty = \frac{a_1}{1-r}$ when $-1 < r < 1$ and $r \neq 0$
Binomial Expansion Theorem:	$\sum_{x=0}^{N} ({}_nC_k)(x)^{n-k}(y)^k$

1 repeating decimal	2 repeating decimals	3 repeating decimals	1 of 2 are repeating	2 of 3 are repeating
$\overline{9}$	$\overline{99}$	$\overline{999}$	$\frac{number - 1}{90}$	$\frac{number - 1}{990}$
$0.\overline{7} = \frac{7}{9}$	$0.\overline{76} = \frac{76}{99}$	$.\overline{625} = \frac{625}{99}$	$.1\overline{8} = \frac{18-1}{90}$	$.2\overline{34} = \frac{234-1}{990}$

	Pascal's triangle as combinations	Pascal's triangle as numbers
$n = 0$ (0th row)	${}_0C_0$	1
$n = 1$ (1st row)	${}_1C_0 \quad {}_1C_1$	1 1
$n = 2$ (2nd row)	${}_2C_0 \quad {}_2C_1 \quad {}_2C_2$	1 2 1
$n = 3$ (3rd row)	${}_3C_0 \quad {}_3C_1 \quad {}_3C_2 \quad {}_3C_3$	1 3 3 1
$n = 4$ (4th row)	${}_4C_0 \quad {}_4C_1 \quad {}_4C_2 \quad {}_4C_3 \quad {}_4C_4$	1 4 6 4 1
$n = 5$ (5th row)	${}_5C_0 \quad {}_5C_1 \quad {}_5C_2 \quad {}_5C_3 \quad {}_5C_4 \quad {}_5C_5$	1 5 10 10 5 1