

## Principles of Math 12

OBJECTIVE	#	TOPIC	MP	A-W	Classes
Domain and Range	1	<b>Transformations</b>	1.1	1.1	
Translations	2		1.1	1.2	
Vertical compressions and expansions	3		1.4	1.4	
Horizontal compressions and expansions	4		1.4	1.4	
Reflections in X or Y axis	5		1.3	1.3	
Inverse function - reflection in $y=x$	6		1.3	1.3	
Reciprocal functions	7		1.7	1.6	
Absolute Value functions	8		1.7	1.6	
Combinations of transformations	9		1.6	1.5	
Graphing Calculator Skills	11				
					<b>7-9</b>
exponential Graphs	12	<b>Logarithms</b>	2.2	2.6	
simplifying/solving by converting to Same Base	13		2.7	2.11	
exponential Applications	14		2.2	2.4	
converting between Log form and Exp form	15		2.5	2.2	
logarithmic Graphs	16		2.5	2.10	
using Log Laws – including change of base rule	17		2.6	2.3	
solving log Equations and checking	18		2.7	2.12	
using logs to find Exponent	19		2.7	2.3	
Continuous growth ( $e$ & $\ln$ )	20		2.8	P141	
logarithmic Applications - general	21		2.7	2.5	
logarithmic Applications - continuous growth	22		2.8	P141	
graphing calc - change of base rule	23			2.3	
					<b>9-11</b>
radian measure conversion	24	<b>Trigonometry - Graphing</b>	4.1	3.2	
arclength (and sector area)	25		4.1	3.2	
coterminal and reference angles	26		4.1	3.3	
standard position angles	27		4.1	3.3	
			4.2	3.4/3.5/ 3.7/4.1/ 4.6	
basic trig ratios	28				
graphing amplitude and reflections	29		4.3	4.2	
graphing period	30		4.3	4.3/4.4	
graphing translations	31		4.4	4.2	
graphing combinations	32		4.4	4.2/4.3	
Applications of periodic functions	34		4.5	4.5	
Graphing reciprocal Trig Functions	34.1		4.6	3.9/4.7	
Graphing Calculator Skills	35				
					<b>8</b>

		<b>Trigonometry – Equations / Identities</b>	5.1		
Solving Trig Equations - restricted domain	36			5.2	
Solving Trig Equations - general solution	37		5.2	5.2	
Solving using Graphing Calculator	38		5.2/5.3	5.1	
Sum and Difference Identities	39		5.5	5.5	
Double-Angle Identities	40		5.5	5.6	
Pythagorean Identities	40.1		5.4	5.3	
Quotient and Reciprocal Identities	40.2		5.4	5.3	
Simplifying Trig Expressions	41		5.5		
Proving Identities	42		5.4	5.4	
Graphing Calculator Skills	44				
					<b>7-8</b>
Definitions of Conic Sections	45	<b>Conics</b>	3.1	9.1	
Identifying Conics by their equations	46		3.6	9.5	
Circle - graphs, radius, centre	47		3.3	9.2	
Parabola - graphs, vertex	48		3.6	9.3/9.4	
Ellipse - graphs, major/minor axes, vertices	49		3.4	9.3/9.4	
Hyperbola - graphs, centre, vertices, asymptotes (transverse but not conjugate axis)	50		3.5	9.3/9.4	
Change to standard form	51		3.6	9.6	
Standard to General form	51.1		3.6	9.6	
Graphing Calculator Skills	59				
					<b>6</b>
		<b>Sequences &amp; Series</b>			
Sigma Notation	62		6.2	P132	
Number of terms	63		6.2	2.7	
Geometric Sequences Basics	64		6.3	2.7	
Geometric Series Basics	65		6.5	2.8	
Infinite Geometric Series	66		6.6	2.9	
given any two terms, find...	67		6.3	2.7	
given a sum and a term, find....	68		6.5	2.7	
given a sum formula, find...	69		6.5	2.7	
other stated forms of problems	70		6.3		
Connect Geometric with Exponential	70.1			2.7	
					<b>7</b>
Fundamental Counting Principle	73	<b>Combinatorics</b>	7.1	6.1	
Tree Diagrams	75		7.1		
Factorial Notation	76		7.2	6.2	
Permutations where all objects are different	77		7.2	6.2	
Permutations where some objects are alike	78		7.2	6.3	
Combinations	79		7.3	6.4	
The Binomial Theorem - Expansions	80		7.5	6.6	
The Binomial Theorem - Finding a term	81		7.5	6.6	
Pathway Problems	82		7.4	6.5	
Graphing Calculator Skills	84				
Pascal's Triangle	84.1		7.4	6.5	
					<b>8</b>

Experimental Probability	85	<b>Probability</b>	8.1	7.1	
outcomes, sample space, events	86		8.1	7.1/7.2	
Independent Events (The Multiplication Rule)	87		8.2	7.4	
Independent vs Dependent - definition	88		8.2	7.4	
Mutually Exclusive Events (The Addition Rule)	89		8.2	7.3	
Mutually Exclusive or Not - definition	90		8.2	7.3	
AND/ OR	91		8.2	7.3/7.4	
Complement (including Birthday Problem)	92		8.2	7.2	
Conditional Probability	94		8.4	7.5	
Conditional Probability (Bayes' Law)	95		8.4	7.5	
Probability using Permutations/ Combinations	96		8.3	7.6	
Graphing Calculator Skills	98				
					<b>8-9</b>
Binomial and other Distributions	99	<b>Statistics</b>	9.1	8.1	
Mean and Standard Deviation	100		9.2	8.2/8.3	
Normal Distributions	102		9.3	8.4	
Standard Normal Distrib	103		9.3	8.5	
Finding Z-scores	104		9.2/9.3	8.5/8.6	
Finding Probabilities	105		9.3	8.5/8.6	
Binomial Distributions	105.5	New – will need to be supplemented.	9.1	8.1	
Normal as Approximation to Binomial $np > 5$ , $nq > 5$	106		9.4	8.7	
GraphCalc- using Lists to calculate mean, SD and for Frequency Distributions...	111		9.2	8.2	
GraphCalc - to find area under curve	112		9.3	8.4	
GraphCalc - binomial	113		9.1		
GraphCalc - other	116				
					<b>9-10</b>