K to 12 BASIC EDUCATION CURRICULUM
SENIOR HIGH SCHOOL – CORE SUBJECT

Grade: 11
Core Subject Title: General Mathematics

Semester: First Semester
No. of Hours/Semester: 80 hours/semester
Prerequisite:

Core Subject Description: At the end of the course, the students must know how to solve problems involving rational, exponential and logarithmic functions; to solve business-related problems; and to apply logic to real-life situations.

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCIES	CODE
Functions and Their Graphs	*The learner demonstrates understanding of...* 1. key concepts of functions.	*The learner is able to...* 1. accurately construct mathematical models to represent real-life situations using functions.	*The learner...* 1. represents real-life situations using functions, including piece-wise functions.	**M11GM-Ia-1**
			2. evaluates a function.	**M11GM-Ia-2**
			3. performs addition, subtraction, multiplication, division, and composition of functions	**M11GM-Ia-3**
			4. solves problems involving functions.	**M11GM-Ia-4**
	2. key concepts of rational functions.	2. accurately formulate and solve real-life problems involving rational functions.	5. represents real-life situations using rational functions.	**M11GM-Ib-1**
			6. distinguishes rational function, rational equation, and rational inequality.	**M11GM-Ib-2**
			7. solves rational equations and inequalities.	**M11GM-Ib-3**
			8. represents a rational function through its: (a) table of values, (b) graph, and (c) equation.	**M11GM-Ib-4**
			9. finds the domain and range of a rational function.	**M11GM-Ib-5**
			10. determines the: (a) intercepts (b) zeroes; and (c) asymptotes of rational functions	**M11GM-Ic-1**
			11. graphs rational functions.	**M11GM-Ic-2**
			12. solves problems involving rational functions, equations, and inequalities.	**M11GM-Ic-3**

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCIES	CODE
	3. key concepts of inverse functions, exponential functions, and logarithmic functions.	3. apply the concepts of inverse functions, exponential functions, and logarithmic functions to formulate and solve real-life problems with precision and accuracy.	1. represents real-life situations using one-to one functions.	**M11GM-Id-1**
			2. determines the inverse of a one-to-one function.	**M11GM-Id-2**
			3. represents an inverse function through its: (a) table of values, and (b) graph.	**M11GM-Id-3**
			4. finds the domain and range of an inverse function.	**M11GM-Id-4**
			5. graphs inverse functions.	**M11GM-Ie-1**
			6. solves problems involving inverse functions.	**M11GM-Ie-2**
			7. represents real-life situations using exponential functions.	**M11GM-Ie-3**
			8. distinguishes between exponential function, exponential equation, and exponential inequality.	**M11GM-Ie-4**
			9. solves exponential equations and inequalities.	**M11GM-Ie-f-1**
			10. represents an exponential function through its: (a) table of values, (b) graph, and (c) equation.	**M11GM-If-2**
			11. finds the domain and range of an exponential function.	**M11GM-If-3**
			12. determines the intercepts, zeroes, and asymptotes of an exponential function.	**M11GM-If-4**
			13. graphs exponential functions.	**M11GM-Ig-1**
			14. solves problems involving exponential functions, equations, and inequalities.	**M11GM-Ig-2**
			15. represents real-life situations using logarithmic functions.	**M11GM-Ih-1**
			16. distinguishes logarithmic function, logarithmic equation, and logarithmic inequality.	**M11GM-Ih-2**
			17. illustrates the laws of logarithms.	**M11GM-Ih-3**
			18. solves logarithmic equations and inequalities.	**M11GM-Ih-i-1**
			19. represents a logarithmic function through its: (a) table of values, (b) graph, and (c) equation.	**M11GM-Ii-2**
			20. finds the domain and range of a logarithmic function.	**M11GM-Ii-3**
			21. determines the intercepts, zeroes, and asymptotes of logarithmic functions.	**M11GM-Ii-4**
			22. graphs logarithmic functions.	**M11GM-Ij-1**
			23. solves problems involving logarithmic functions, equations, and inequalities.	**M11GM-Ij-2**

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCIES	CODE
Basic Business Mathematics	*The learner demonstrates understanding of...* 1. key concepts of simple and compound interests, and simple and general annuities.	*The learner is able to...* 1. investigate, analyze and solve problems involving simple and compound interests and simple and general annuities using appropriate business and financial instruments.	24. illustrates simple and compound interests.	**M11GM-IIa-1**
			25. distinguishes between simple and compound interests.	**M11GM-IIa-2**
			26. computes interest, maturity value, future value, and present value in simple interest and compound interest environment.	**M11GM-IIa-b-1**
			27. solves problems involving simple and compound interests.	**M11GM-IIb-2**
			28. illustrates simple and general annuities.	**M11GM-IIc-1**
			29. distinguishes between simple and general annuities.	**M11GM-IIc-2**
			30. finds the future value and present value of both simple annuities and general annuities.	**M11GM-IIc-d-1**
			31. calculates the fair market value of a cash flow stream that includes an annuity.	**M11GM-IId-2**
			32. calculates the present value and period of deferral of a deferred annuity.	**M11GM-IId-3**
	2. basic concepts of stocks and bonds.	2. use appropriate financial instruments involving stocks and bonds in formulating conclusions and making decisions.	33. illustrate stocks and bonds.	**M11GM-IIe-1**
			34. distinguishes between stocks and bonds.	**M11GM-IIe-2**
			35. describes the different markets for stocks and bonds.	**M11GM-IIe-3**
			36. analyzes the different market indices for stocks and bonds.	**M11GM-IIe-4**
			37. interprets the theory of efficient markets.	**M11GM-IIe-5**
	3. basic concepts of business and consumer loans.	3. decide wisely on the appropriateness of business or consumer loan and its proper utilization.	38. illustrates business and consumer loans.	**M11GM-IIf-1**
			39. distinguishes between business and consumer loans.	**M11GM-IIf-2**
			40. solves problems involving business and consumer loans (amortization, mortgage).	**M11GM-IIf-3**
Logic	*The learner demonstrates understanding of...* 1. key concepts of propositional logic; syllogisms and fallacies.	*The learner is able to...* 1. judiciously apply logic in real-life arguments.	41. illustrates a proposition.	**M11GM-IIg-1**
			42. symbolizes propositions.	**M11GM-IIg-2**
			43. distinguishes between simple and compound propositions.	**M11GM-IIg-3**
			44. performs the different types of operations on propositions.	**M11GM-IIg-4**
			45. determines the truth values of propositions.	**M11GM-IIh-1**
			46. illustrates the different forms of conditional propositions.	**M11GM-IIh-2**
			47. illustrates different types of tautologies and fallacies.	**M11GM-IIi-1**

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCIES	CODE
			48. determines the validity of categorical syllogisms.	**M11GM-IIi-2**
			49. establishes the validity and falsity of real-life arguments using logical propositions, syllogisms, and fallacies.	**M11GM-IIi-3**
	2. key methods of proof and disproof.	2. appropriately apply a method of proof and disproof in real-life situations.	50. illustrates the different methods of proof (direct and indirect) and disproof (indirect and by counterexample).	**M11GM-IIj-1**
			51. justifies mathematical and real-life statements using the different methods of proof and disproof.	**M11GM-IIj-2**

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Code Book Legend

Sample: M11GM-Ia-1

LEGEND		SAMPLE	
First Entry	Learning Area and Strand/ Subject or Specialization	Mathematics	**M11**
	Grade Level	Grade 11	
Uppercase Letter/s	Domain/Content/ Component/ Topic	General Math	**GM**
			-
Roman Numeral **Zero if no specific quarter*	Quarter	First Quarter	**I**
Lowercase Letter/s **Put a hyphen (-) in between letters to indicate more than a specific week*	Week	Week one	**a**
			-
Arabic Number	Competency	represents real-life situations using functions, including piece-wise functions	**1**

References:

Barnett, Raymond, et.al. Precalculus (7th ed). NY, USA: McGraw-Hill Education, 2008.

Clarke, Jonathan, Tomas Jandik, and Gershon Mandelker. "The Efficient Markets Hypothesis," Expert Financial Planning: Advice from Industry Leaders, (2001): 126-141.

Crauder, Bruce; Benny Evans; & Alan Noell. Functions and change: A modeling approach to college algebra and trigonometry. Boston: Houghton Mifflin, 2008.

De Laplante, K. (2013). What is a good argument? The truth condition

Schulz, K. (2015). The really big one. http://www.newyorker.com/magazine/2015/07/20/the-

Stewart, J., Redlin, L., & Watson, S. (2012). Precalculus: Mathematics for calculus (6th ed). Belmont, CA: Brooks/Cole, Cengage Learning.

Waner, Chris & Steven R. Costenoble. Supplementary Chapters to Accompany Finite Mathematics, 2nd ed. CA: Brooks/Cole, 2001.

Young, Cynthia Y. College algebra (3rd ed). Hoboken, NJ: John Wiley & Sons, 2012.

(http://www.zweigmedia.com/RealWorld/logic/logicintro.html)

http://mathworld.wolfram.com/Catenary.html

https://www.youtube.com/watch?v=9mk8RWTsFFw

http://newsinfo.inquirer.net/623749/philippines-welcomes- 100-millionth- baby

http://www.investopedia.com/terms/e/efficientmarkethypothesis.asp?layout=infini&v=5F&orig=1&adtest=5F

http://www.periodictable.com/Isotopes/030.71/index.p.full.html

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