Pre-Calculus 11 – Learning Targets

Section	Learning Target	Procedural Context to Master	Test Result	Re-Test Result
1	$1-1$ *Factoring Quadratics*	• Understand that factoring is 'reverse FOIL" • Connecting the middle term to the "OI" sum • Connecting the last term to "L" factors • Perfect Square Trinomials • Difference of Squares		
	$1-2$ *Factoring Complex Quadratics*	• Factoring out the A term if possible • Using Factoring by Grouping or AC Method • Checking factor process using FOIL • Using substitution to factor more complex and complicated trinomials		
2	$2-1$ *Connecting Exponents and Radicals*	• Understand the index and n^{th} root • How negatives are related to the index of the root • Rational exponents and radical relationships • Simplifying radicals using rational exponent form • Simplifying radicals using root properties		

	$2-2$
	
	Operations with Radicals
		• Addition and Subtraction
		  ○ Simplify first to identify object of radical
		  ○ Understand to add / subtract same radicals
		• Multiply and Divide
		  ○ One and two-term multiplication
		  ○ Understanding the squaring of radicals (cubing, etc.)
		  ○ Rationalizing the denominator using conjugates		

	$2-3$ *Solving Radical Equations*	• Isolating the radical if possible • Using FOIL of radical statements when necessary • Squaring to remove the radical • Using algebraic principles to solve for the variable • Checking solutions for extraneous values • Identifying Domain restrictions		

Section	Learning Target	Procedural Context to Master	Test Result	Re-Test Result
3	$3-1$ *Simplifying Rational Expressions and Identifying Restrictions*	• Undefined values when the denominator equals 0 • Differing between asymptotes and holes • Factoring quadratics and expressions • Canceling common factors • Knowing when you cannot simplify further		
	$3-2$ *Operations with Rational Expressions*	• Addition and Subtraction o Simplify first to identify denominator factors o Acquiring a common denominator o Distributing factors when necessary in the numerator o Understand to add / subtract numerators o Simplify the result o Identify restrictions • Multiply and Divide o Factor each rational expression to identify factors o Cancel out what is available to cancel o When dividing, multiply by the reciprocal o Identify restrictions		
	$3-3$ *Solving and Graphing Rational Equations*	• Using the Lowest Common Denominator to eliminate • Not requiring denominators after eliminating them • Keeping the restrictions from the original set-up • Comparing solutions to restrictions • Graphing x and y intercepts • Graphing asymptotes and holes • Accurate general shape of graph behaviour		
4	$4-1$ *Properties of Quadratics*	• Understanding how the $a-value$ affects the shape of the parabola • Understanding how Standard Form provides the coordinates of the vertex • Completing the Square to achieve Standard Form from General Form • Graphing x and y intercepts • Find the equation of a Parabola		
	$4-2$ *Solving and Graphing Quadratics*	• Using factoring to achieve $x-intercepts$ • Knowing which factoring method to use most efficiently o Basic Factoring o Grouping or AC o Square Root Method o Quadratic Equation • Using Vertex and Symmetry to accurately graph the given Quadratic		

Section	Learning Target	Procedural Context to Master	Test Result	Re-Test Result

5	$5-1$
	
	 Graphing and Solving Non-Linear Systems
		• Graphing
		    o Lines and Parabolas
		    o Differing points of intersection meaning
		    o Intercepts $(x, y, and\ solution(s))$
		 • Solving
		    o Solve using substitution or equality principles
		    o Understanding one, two, infinite, and no solution		

	$5-2$
	
	 Graphing and Solving Non-Linear Inequalities
		• Graphing
		    o Lines and Parabolas
		    o Differing points of intersection meaning
		    o Accurate line representation and areas of shading
		 • Solving
		    o Solve using substitution or equality principles
		    o Understanding range of possible solutions (shading)		

6	$6-1$
	
	 Interest, Loans, and Annuities
		• Simple versus Compound Interest
		 • Different types of borrowing
		 • Annuities and Loans
		    o Benefits of Saving
		    o Detriments of Borrowing		

	$6-2$ *Budgeting 101*	• Creating and analyzing basic budgets • Discussing want vs need scenarios • Living within our means • Fixed versus variable expenses • Assessing and reflecting on budget		

Section	Learning Target	Procedural Context to Master	Test Result	Re-Test Result

7	$7-1$
	
	 Trigonometric Vocabulary
		• Understanding Trigonometric Vocabulary
		   ○ Terminal Arm in Standard Position
		   ○ Terminal and Co-Terminal
		   ○ Reference Angles
		   ○ Coordinate System and SOH CAH TOA relationships		

	$7-2$ *Right Angle Triangles and Special Angles*	• Sine, Cosine, and Tangent Trig Ratios • SOH CAH TOA with coordinates • Algebraic process of solving right angle triangles • Right angle triangles on the unit circle • Special angel relationships and exact answers • $30-60-90 \ and \ 45-45-90$ triangles		
	$7-3$ *Non-Right-Angle Trigonometry*	• Sine Law (Including Ambiguous Case) • Cosine Law • Solving Oblique Triangles by dropping a perpendicular • Applications of Trigonometry		