Foundations and Pre-Calculus 10 – Learning Target List

Section	Learning Target	Procedural Context To Master	$L-T$ Result	Re-Test Result

1	$1-1$
	Numeracy Basics, GCF and LCM, and Exponent Laws
	Workbook 1.1a-1.1b
		• Numeracy Fundamentals
		  ○ Prime Factors and Factors
		• Lowest Common Multiple and Greatest Common Factor
		  ○ Basic understanding of Multiple versus Factor
		  ○ Using Prime Factors to Determine LCM and GCF
		• Exponent Laws
		  ○ All laws and rules from grade nine
		  ○ Include rational and negative exponents		

	$1-2$
	Radicals and Their Relationship to Roots and Exponents
	Workbook 1.2a-1.2b
		• Understand how the number of identical factors relates to the index of the radical
		• Solving radical expressions without a calculator
		• Simplifying Irrational Radical Expressions
		  ○ Using multiple techniques
		  ○ Difference between squares, cubes, etc.
		• Converting from Mixed to Entire Radicals
		  ○ Breaking out of the root versus going back in		

2	$2-1$
	Relations and Functions
	Workbook 2.1a-2.1b
		• Domain and Range (Set Notation)
		• Understand the Difference between: Relations, Functions, and $1-1$ Functions
		• Using the Vertical and Horizontal Line Test to distinguish between the three scenarios
		• Understanding input/output with respect to x/y
		• Graphing Non-Linear Equations
		  ○ Quadratics
		  ○ Domain and Range		

	$2-2$
	Linear Equations, Slope, and Rates of Change
	Workbook 2.2a-2.2b
		• Graph Slope-Intercept Form and Standard Form
		• Slope:
		  ○ From a Graph
		  ○ From Two Points (Using Slope Equation)
		  ○ 4 types of Slope
		• Rates of Changes
		  ○ Relationship to Slope with Units
		  ○ Contextual Examples link to Slope-Intercept Form		

	$2-3$
	Arithmetic Sequence and Series
	Workbook 2.3
		• Identify the Common Difference
		• Understand the Sequence Equation: $t_n = t_1 + (n-1)d$ $t_1 = a$, they are interchangeable
		• Solving for various missing information
		• Arithmetic Series
		  ○ Use the provided equation when necessary
		  ○ Solve for n first with sequence equation		

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3	$3-1$
	Linear Equations: The Three Forms
	Workbook 3.1a-3.1b
		• Slope-Intercept/Standard and General/Point-Slope Form
		  ○ Solving given particular information
		  ○ Know which equation is the most appropriate
		• Algebraically Manipulate to achieve the desired form
		• Graphing form a Slope and a Point, Two Points, or Intercepts		

	$3-2$ **Writing Equations of Lines** Workbook 3.2	• Write an equation is a given form • Depending on information provided, know where to start • Horizontal and Vertical Lines • Parallel and Perpendicular Slopes and how they relate		

	$3-3$
	Applications and Function Notation
	Workbook 3.3a-3.3b
		• Understand how Linear Modelling applies to contextualized scenarios
		• Accurately translate math equations from word problems
		• Understand function notation
		  ○ Relationship between inputs and outputs
		  ○ x versus $f(x)$
		  ○ $f(x)=y$		

4	$4-1$
	Solving Systems of Equations Using Graphing and Addition Method
	Workbook 4.1a-4.1b
		• Understand how systems of equation have solutions
		  ○ Infinite Solutions/One Solution/No Solutions
		• Graphing to achieve a result
		  ○ Understand how slope and $y-intercept$ relate to potential solutions
		  ○ Use slope and intercepts to graph accurately
		• Use the Addition Method to Solve for Solutions
		  ○ How does addition eliminate a variable?
		  ○ Using multiples to ensure elimination
		  ○ Difference between 0 and Infinite Solutions in an equation		

	$4-2$
	Solving Systems of Equations Using Substitution and Two-Variable Word Problems
	Workbook 4.2a-4.2b
		• Use the Substitution Method to Solve for Solutions
		  ○ Algebraically Manipulate when Necessary
		  ○ Substitute into a given equation to eliminate a variable
		  ○ Solve and substitute to solve for the remaining variable
		  ○ Understand how solutions represent (x,y) coordinates
		• Set-up 2-varaible word problems and use elimination techniques to derive solutions		

Foundations and Pre-Calculus 10 – Learning Target List

Section	Learning Target	Procedural Context To Master	$L-T$ Result	Re-Test Result

5	$5-1$
	Polynomial Basics and Simple Multiplication
	Workbook 5.1a-5.1b
		• Polynomial Vocabulary
		  ○ Term, Degree, Leading Term, Descending Order
		• Difference between a Polynomial and Non-Polynomial
		• Combining Like Terms and Evaluating Polynomials
		• Multiplication of Polynomials
		  ○ Understand Distributivity (WATERBOMBING)
		  ○ Monomial with Monomial
		  ○ Monomial with Polynomial
		  ○ Binomial Multiplication (FOIL)
		  ○ Binomial with Polynomial (Distributivity)		

	$5-2$
	Introduction to Factoring
	Workbook 5.2a-5.2b
		• Factoring Polynomials
		  ○ Factoring using GCF
		  ○ Factoring basic non-a-term Trinomials
		  ○ Difference of Squares and Perfect Square Trinomials		

	$5-3$
	Factoring Complex Quadratics
	Workbook 5.3
		• Factoring Quadratics with an a-term
		  ○ Factor out leading term if possible
		  ○ Factor using the AC Method
		  ○ Factor by Grouping		

Foundations and Pre-Calculus 10 – Learning Target List

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6	$6-1$
	
	Right-Angle Triangle Trigonometry
	
	Workbook 6.1a-6.1d
		• Understanding Trigonometric Vocabulary
		  ○ Sine, Cosine, Tangent as Ratios
		  ○ Opposite, Adjacent, Hypotenuse
		• Understanding how to accurately use your calculator
		  ○ Degree Mode
		  ○ Which Function to use to Solve for an Angle vs Side
		• SOH CAH TOA
		• Understanding Ratios – Algebra of Ratio Solving
		• Correct Identification of given sides and angles
		• Special Angle Ratio
		  ○ $30-60-90$
		  ○ $45-45-90$
		  ○ Relation to the Unit Circle
		• Solving Trigonometry Questions in Context		

7	$7-1$
	
	Ways of Earning
	
	Workbook 7.1a-7.1b
		• Understand how to calculate different methods of income
		  ○ Hourly (including overtime)
		  ○ Hourly with Tips
		  ○ Commission and Salary
		  ○ Bi-Weekly versus Semi-Monthly		

	$7-2$
	
	Deductions
	
	Workbook 7.2
		• Gross versus Net pay
		• Consider and Calculate Deductions
		  ○ CPP and EI
		  ○ Income Tax
		• Discuss Taxes and other Potential Deductions		