Beginning Algebra I Concepts that can be Integrated with the Graphing Calculator

Order of Operations

- **Graphing calculator follows the literal order of operations**
- **It cannot interpret what you meant it to do only what you tell it to do**

- -3^2

- $(-3)^2$

- 2 ½ - 3 ¼

- $\frac{3*5-9}{2-4*5}$

Evaluating Variable Expressions

- **Storing values in variables: STO> and X,T,θ,n or ALPHA-Letter Key**
- **Replay or Go back or Undo key: 2nd-ENTER/ENTRY**

- Evaluate 2x + 3y for (2,-7) and (-4,5)

Determining if Two Expressions are Equivalent

- **Testing Function: 2nd-MATH/Test and =, >, <, ≥, ≤**
- **Zero means false; one means true/correct**

- Simplify (2x +3) - (4x – 7) and check to see if your answer is correct

Converting Decimals to Fractions

- **MATH>Frac**
- **For repeating decimals enter enough repetitions (fill at least one line) to get a fractional equivalent**

- Convert .685 to decimal form

- Convert .22222… to decimal form

Checking Equation Solutions

- **STO> and X,T,θ,n and/or 2nd-MATH/TEST and =, >, <, ≥, ≤**
- **Zero means false; one means true/correct**

- Given: $2(x + 3) – 4x = 8(3x – 5) + 7$. Does $x = 1.5$?

- For $y = 3x + 5$ is (2,6) a solution?

Greatest Common Factor and Least Common Multiple

- **Can only take two inputs at a time**
- **MATH** and **NUM** and **#8/lcm** or **#9/gcd** then enter two values; repeat using **2nd-ENTER/ENTRY**

- Find the GCF of 244, 368, and 482

- Find the LCM of 24, 39, and 66

Powers and Roots

- **There are specific keys for squared (x^2), square root (2^{nd}-x^2), cubed(MATH and #3/^{3}) and cube root (MATH and #4/$\sqrt[3]{}$( )**
- **For other powers use the carrot (^)**
- **For other roots STO> root size in x then MATH and #5/x$\sqrt{}$**

- Find the square root of 529

- Cube 15

- Find the 8^{th} root of 1679616

- Raise -2 to the 12^{th} power

Use your calculator to solve the following:

1. – 27 raised to the 4^{th} power _____

2. $\frac{38}{53} \div \frac{28}{57}$ expressed in fraction form _____

3. $\frac{13 * 18 - 75}{15 + 17\ (85)}$ in fraction form _____

4. 285.739 ÷ .005 _____

5. Cube root (3^{rd} root) of 879 to 3 decimal places _____

6. Convert .231231231231231… into fraction form _____

7. Is – 27 (53) – 77 (less than, greater than, or equal to) – 85 – 58(23) _____

8. Evaluate $17x^2 - 115x + 37$ for x = - 5 and for x = 72 (x = -5) _____ (x = 72) _____

9. Evaluate $\frac{13x - 75}{12 - 35x}$ for x = 7 and x = - 2/5 and put both in fraction form (x = 7) _____
(x = -2/5) _____

10. Find the least common multiple for 15, 27, and 81 _____

11. Find the greatest common factor of 84, 102 and 228 _____

12. Evaluate $\left| \frac{12x}{5} - \frac{15}{7} \right|$ for x = - 8 and express in fraction form _____

13. Find the 5^{th} root of 829 expressed as a decimal to 3 decimal places _____

14. Is x = -2 a solution for $2(3x + 9) > 3(x - 7)$ _____