GRAPHING FUNCTIONS OF Y ON A CALCULATOR x = f(y)

FOR FUNCTIONS:

1. Where there is an **x**, substitute a **y**.
2. Where there is a **y**, substitute a **-x**.
3. Input and graph functions with substitutions.
4. When graph appears, turn your calculator so that the display is at 3 o-clock. The x-axis becomes the y-axis and vice-versa. Orientation of the functions will be correct.

FOR POINTS OF INTERSECTION:

5. Graph the functions as above. Locate the point of intersection using ISECT or other method.
6. The x-coordinate of the original point of intersection becomes -y.
7. The y-coordinate of the original point of intersection becomes x.
   For example: If the point (-2, 4) is displayed as the point of intersection, the solution is actually (4, 2).

EXAMPLES FOR POINTS OF INTERSECTION:

Example #1

Graph: $x_1 = 12y^2 - 12y^3$ as $y = 12(-x)^2 - 12(-x)^3$ which is really $y = 12x^2 + 12x^3$

Graph: $x_2 = 2y^2 - 2y$ as $y = 2(-x)^2 - 2(-x)$ which is really $y = 2x^2 + 2x$

Turn calculator display to 3 o'clock. The functions are graphed correctly.
Point of intersection on calculator is displayed as (-1, 0), but it is really the solution (0, 1)
The origin (0, 0) is also a solution.

Example #2

Graph: $x_1 = (y-1)^2$ as $y = (-x-1)^2$ -- don't need to simplify!

Graph: $x_2 = 2\sqrt{y}$ as $y = 2\sqrt{-x}$ -- don't worry about negative under radical sign!

Turn calculator display to 3 o'clock.
Point of intersection on calculator is displayed as (-.138, .743) but it is really the solution (.743, .138).
Point of intersection on calculator is displayed as (-2.835, 3.368) but it is really the solution (3.368, 2.835)