1 We are most accustomed to seeing functions where y is dependent upon x, but that is not the only kind that can exist. Press MODE on your TI-8\* and switch to PAR (short for PARAMETRIC). What are x and y both functions of? What has your X button become?

2 Try setting X and Y both equal to T. In RAD mode, view under ZOOM-STANDARD. Sketch what you see.

3 Press WINDOW and explain why the graph only exists in the first quadrant.

4 Lets get a little more complicated. Make X1=T^2-3T+1 and Y1=-T^2+2T+3. Sketch the graph. Explain why Y cannot be a function of X.

5 Sometimes, we graph a function parametrically and we see that it CAN be converted to a function of x. In that case, we typically see to eliminate the parameter and create an ordinary equation for it. In this case, it will be difficult to solve for t in one equation and **substitute** it into the other. Instead, let us eliminate the difficulty, namely t2. In other words, add the two equations from #4. Solve for t.

6 Now substitute the definition of t you found make into either original equation. What about your new equation confirms that y is not a function of x?

7 Still in RAD, change to X1=3sin(T) ; Y1=3cos(T) and X2=5cos(T) ; Y2=5sin(T). Under MODE, switch to SIMULtaneous mode, and graph both sets of equations at once. Observe carefully. If you miss the “animation”, try adding or subtracting 0 (i.e. change any equation in any way, and the TI-8\* will start over again.) What is the difference in the two graphs?

8 What if both 5’s had been 3’s? Assuming we can eliminate the parameter, what would be different then about equations sets 1 and 2?

9 In your own word, describe what you thin the point of this problem set it.