# Week 1 Recitation Worksheet <br> MATH:113, Recitations 304 and 305 

Names: $\qquad$
We'll start off by reviewing concepts you should be familiar with already, but you'll need to be familiar with throughout the course. Match the definitions on the front to the pictures or expressions on the back.
(A) $y$ is a function of $x$. We say a variable $y$ is "a function of" $x$ when $y$ (the output value) depends on $x$ (the input value), and $y$ is written in terms of $x$.
(B) $x$ is a function of $y$.
(C) Not a function. A function $f$ describes a relationship: given a set of inputs and a set of outputs, each input is assigned to exactly one output. The set of all inputs to $f$ is called the domain of $f$, and the set of all possible outputs of $f$ is called the range of $f$.
(D) An even function in terms of $x$. If $f$ is an even function, then $f$ is mirrored across the $y$ axis: $f(x)=f(-x)$.
(G) Odd function. If $f$ is an odd function, then it changes behavior based on sign: it is rotationally symmetric about the origin $(0,0)$.
(H) Piecewise function. A function $h$ is piecewise if it's made up of multiple functions, each defined on a specific interval.
(J) Increasing function on an interval. If $f$ is increasing on an interval $[a, b]$, then for any inputs $x_{1}$ and $x_{2}$ where $x_{1}<x_{2}, f\left(x_{1}\right)<f\left(x_{2}\right)$.
(K) Decreasing function on an interval.
(L) Periodic function. A function $f$ is periodic if its values repeat at an interval.
(M) $y=|x|$
(N) $y=x^{3}+1$
(P) $x=y^{2}-2$
$(Q)$ Domain is all real numbers.
(T) Range is all real numbers.
(U) Circle with a radius of 3 .
(V) $f(e)=2$
(W) The point $(-2,0)$ is on this graph.
(Z) Centered at $(1,3)$.
$(x-1)^{2}+(y-3)^{2}=9$

