

HOMEWORK #2
MATH 185-4
FALL 2009

DUE FRIDAY SEPTEMBER 18TH

- (1) Draw the set of all points (x, y) satisfying the following conditions:
- (i) $x = |y - x|$
 - (ii) $y + x$ is an integer
 - (iii) $x = y/x$.
- (2) Describe the general features of the graph of f if
- (i) f is even.
 - (ii) f is odd.
 - (iii) $f(x) = f(x + a)$ for all x (a function with this property is called **periodic** with **period** a).
- (3) The symbol $\lfloor x \rfloor$ is used to denote the largest integer $\leq x$ (sometimes this symbol is also denoted by $[x]$). The symbol $\lceil x \rceil$ is used to denote the smallest integer $\geq x$. Draw the graph of the following functions:
- (i) $f(x) = \lceil x \rceil$.
 - (ii) $g(x) = -\lfloor -x \rfloor$.
 - (iii) $f(z) = z - \lfloor z \rfloor$.
 - (iv) $h(x) = \lfloor \frac{1}{x} \rfloor$.