

Name:

11/3/06

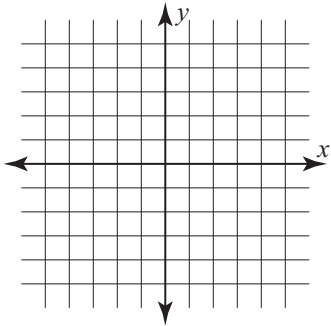
Math 111 Quiz 5

1. (3pts each) True or False.

(a) The range of the function with rule  $f(x) = -2|x - 4| - 6$  is  $(-\infty, -6]$ .

(b) The equation  $|3x^2 - 2x + 4| = -4$  has no solution.

2. (10pts) Sketch a graph of the function  $f$  where  $f(x) = -3|x + 1| + 4$ .

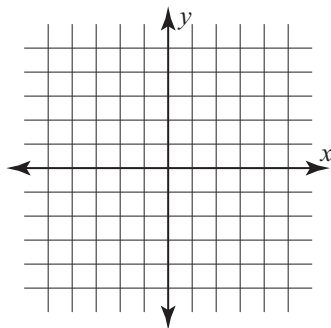


3. Suppose  $f$  is the function with rule

$$f(x) = \begin{cases} 2 & \text{if } -4 < x \leq -2, \\ x^2 - 2 & \text{if } -2 < x < 1, \\ -x & \text{if } x > 1. \end{cases}$$

(a) (3pts) State the domain of  $f$  using interval notation.

(b) (10pts) Sketch a graph of  $f$  and label all holes, endpoints as well as any  $x$  and  $y$  intercepts.



(c) (3pts) State the range of  $f$  using interval notation.

4. (10pts) Find all real numbers  $x$  such that

$$|7x - 4| \geq 6$$