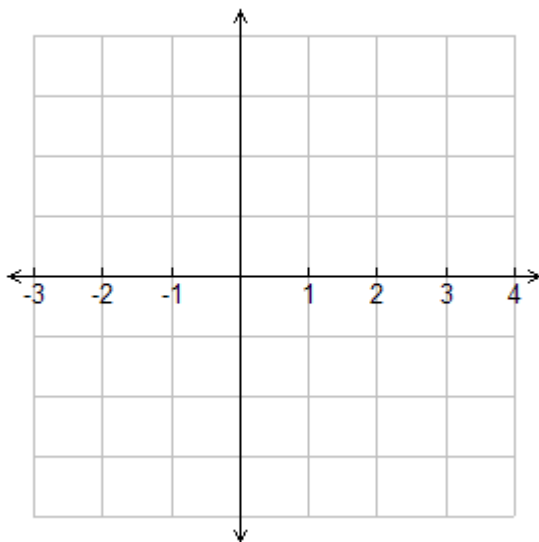


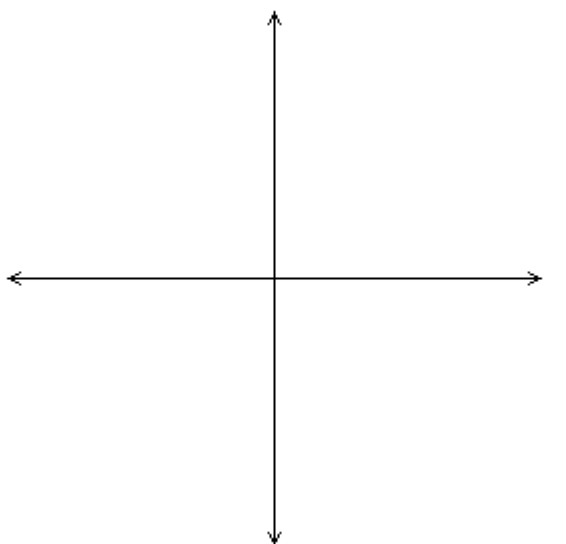
Math 131 Week in Review
Sections 4.2, 4.3, 4.6
4/4/10

1. Sketch a graph of a function f that is continuous on $[-2, 3]$, has an absolute minimum at -1 , an absolute maximum at 3 , and a local minimum at 0 .



A critical number of a function f is a number c in the domain of f such that either $f'(c) = 0$ or $f'(c)$ does not exist.

2. Sketch the graph of a function that has 2 local minima, 1 absolute maximum, and 6 critical numbers.



8. Find the absolute maximum and absolute minimum value of $G(x) = \frac{x^2 - 9}{x^2 + 9}$ on the interval $[-5, 5]$.

9. What is the smallest perimeter possible for a rectangle whose area is 16 in^2 , and what are its dimensions?

Finney, Demana, Waits, and Kennedy, *Calculus: Graphical, Numerical, Algebraic, 3rd ed.*, 2007.

10. Two sides of a triangle have lengths a and b , and the angle between them is θ .

What value of θ maximize the triangle's area? [Hint: $A = \frac{1}{2} ab \sin \theta$.]

Finney, Demana, Waits, and Kennedy, *Calculus: Graphical, Numerical, Algebraic, 3rd ed.*, 2007.

