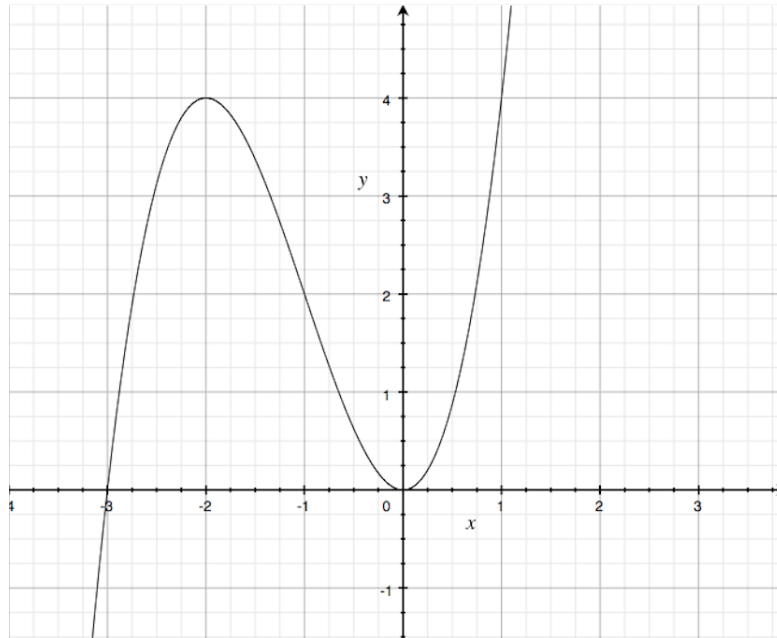


Show all your work and simplify your answers unless otherwise specified. If you do not turn in a rewrite within a week (or after the fifth attempt), your score will be solidified.

1. Consider the function f whose graph is given:



- (a) Determine the x and y -intercepts of f .
- (b) Determine the intervals where f is increasing and where f is decreasing. Assume the domain of f is $(-\infty, \infty)$. Write your answers using interval notation.
- (c) Determine the local minimum and local maximum of f as well as where they occur.
- (d) Determine $f(1)$, $f(-1)$ as well as all the x -values where $f(x) = 4$.
- (e) Does this graph contain any symmetry? Conclude, just by looking at the graph, whether f is an even function, an odd function, or neither.

2. Determine whether the given function is even, odd, or neither

$$f(x) = \frac{x\sqrt{9-x^2}}{|x|}$$

3. Given the function f , find and simplify the difference quotient of f , $\frac{f(x+h)-f(x)}{h}$:

$$f(x) = x^3 + 1$$