Worksheet 13

Math 251, Summer 2017

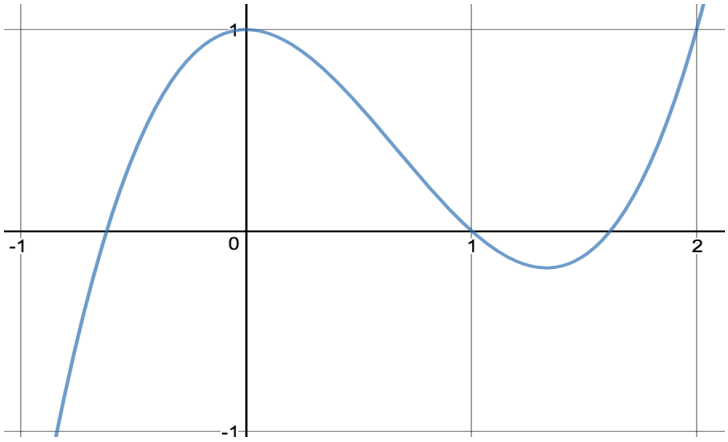
Name: _____

1. Use the "Positivity Test" to find the intervals where the function is positive and negative. (There is absolutely no calculus in this question.)

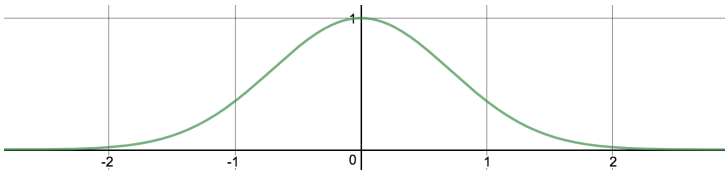
   (a) $G(x) = x\sqrt{x^2+1}$ (b) $h(x) = x^3 - x$ (c) $R(t) = \arctan(t^2 - 1)$

2. Determine the intervals where $f(x) = x^3 - 2x^2 + 1$ is increasing, decreasing, concave up, and concave down.

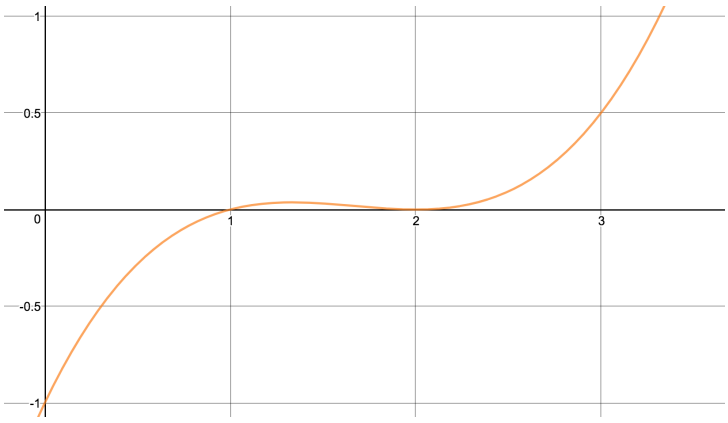
3. Given the graph of f, sketch a graph of f'.



4. Given the graph of f, sketch a graph of f''.



5. Given the graph of f' below, sketch the graph of f assuming that f goes through the origin.



6. Given the graph of f' below, sketch the graph of f assuming that f goes through the point $(0, -1)$.