

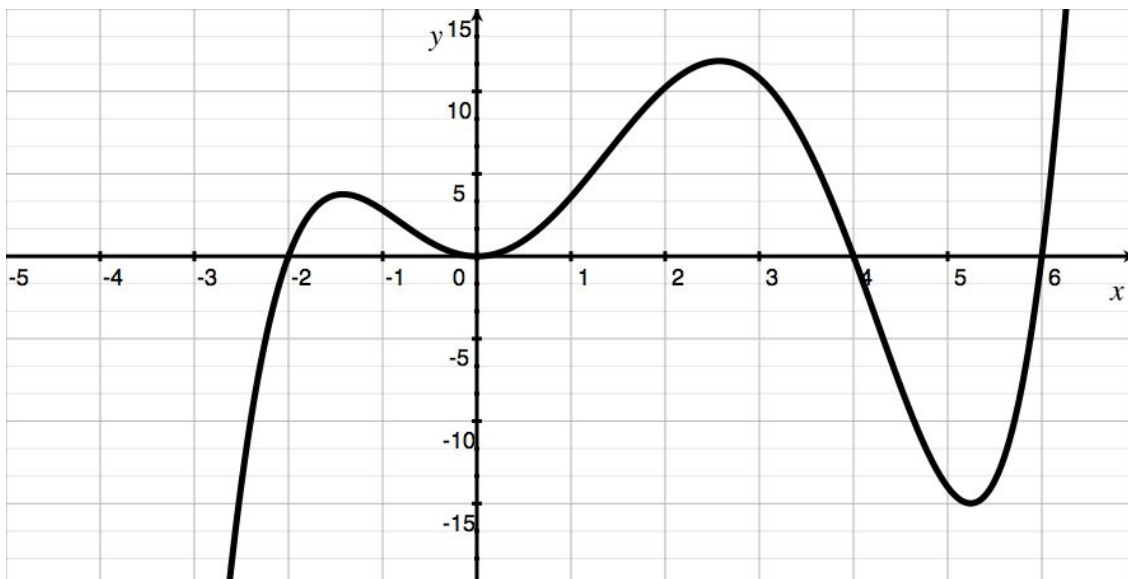
# Quiz 7

## Math 111

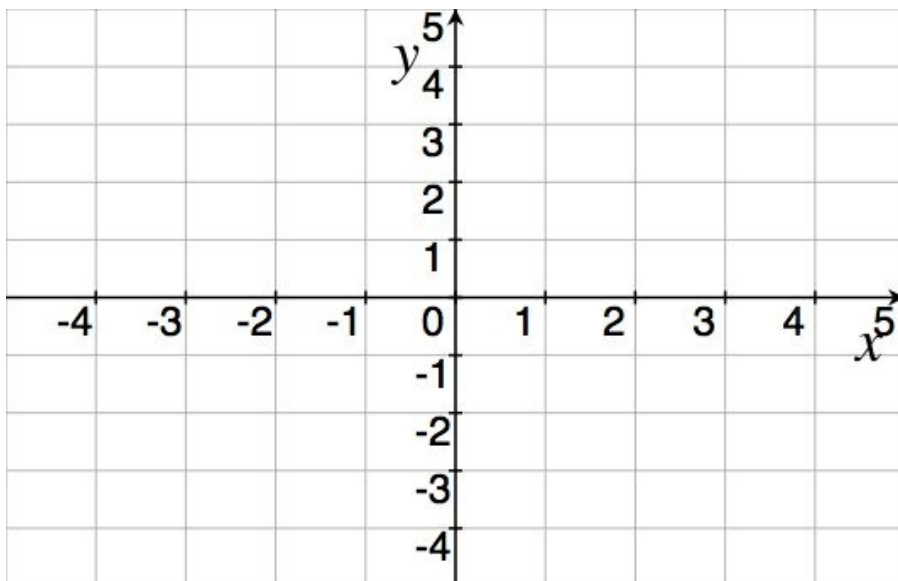
Name:

Show *all* your work algebraically for each and simplify. No credit is given without supporting work.

- [9] A complete graph of a polynomial function  $g$  is shown below.
  - Could  $g$  be a polynomial?
  - Assuming  $g$  is a polynomial, is the degree of  $g$  even or odd?
  - Assuming  $g$  is a polynomial, is the leading coefficient of  $g$  positive or negative?
  - What are the real roots of  $g$ ?
  - Assuming  $g$  is a polynomial, what is the smallest possible degree of  $g$ ?
  - Assuming  $g$  is a polynomial, list all the factors of  $g$ .



2. [5] List the transformations needed to transform the graph of  $h(x) = \frac{1}{x}$  into the graph of  $f(x) = \frac{1}{x-2}$ . Graph both  $h$  and  $f$ . Be sure to identify which one is which.



3. [6] Find and simplify the difference quotient of the function  $f(x) = \frac{3}{x-2}$ .

Recall the different quotient is  $\frac{f(x+h) - f(x)}{h}$ .