

MA111
Test 1A
SPRING 2005

Show all work in Blue Books. Work only 1 problem per side of page. Box answers. Good luck!

10pt 1. Factor Completely:

$$5(x^2+3)^4(2x)(x-2)^4 + (x^2+3)^5(4)(x-2)^3$$

2. Let $f(x) = x^2 - 9$, $g(x) = \frac{1}{x}$, $h(x) = \sqrt{x-3}$

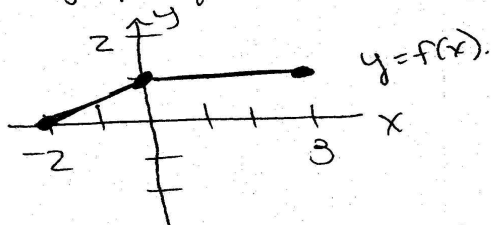
8pt a) Find $\frac{f(x+h) - f(x)}{h}$ and simplify.

4pt b) Find the domain of h .

4pt c) Find $(\frac{g}{f})(x)$

4pt d) Find the domain of $\frac{g}{f}$.

3. Find each of the following given the graph of f below.



4pt a) Domain of f .

4pt b) If $x=3$, what is $f(x)$?

4pt c) Where is f increasing?

8pt d) Sketch the graph of $y = -f(x+1) - 2$