

## Homework 4

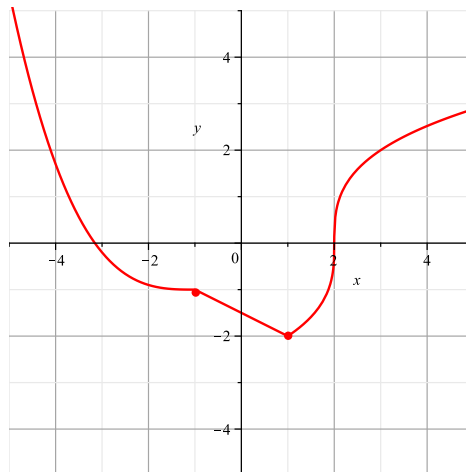
Due: 6-19-14

Use the functions  $f$ ,  $g$ , and  $h$  defined below to answer problems 1-4.

$$f(x) = 3x^2 - 4x + 1,$$

$x$	0	1	2	3
$g(x)$	1	2	4	8
$g'(x)$	0.7	1.4	2.8	5.5

Graph of  $h(x)$ :



**Problems 1-4 – Find the following:**

1.  $f'(x)$
2.  $(fg)'(2)$
3.  $(h + g)'(0)$
4.  $(g^{-1})'(1)$

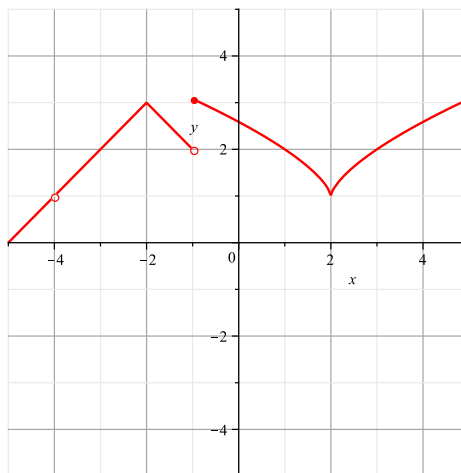
**Problem 5:**

Find  $\frac{dy}{dx}$  given the expression  $\ln(x) + \ln(y^2) = 3$ .

**Problem 6:**

Let  $k$  be given by the following graph:

Graph of  $k(x)$ :



Evaluate  $\left. \frac{d}{dx} \sinh(k(x)) \right|_{x=-3}$ .