

Key

# Quiz 1

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

1. [3] (WebHW1 #13) Let  $f(x) = \frac{5}{x}$ . Find  $f(x+h) - f(h)$  and simplify.

$$f(x+h) = \frac{5}{x+h}$$

$$f(h) = \frac{5}{h}$$

So  $f(x+h) - f(h) = \frac{5}{x+h} - \frac{5}{h}$

Simplify  $\textcircled{+1}$   $= \frac{\frac{h}{h} \cdot 5}{h \cdot xm} - \frac{5 \cdot xm}{h \cdot xm}$   
 $= \frac{5h - 5(x+h)}{h(x+h)} = \frac{-5x}{h(x+h)}$

2. Define  $G$  that takes numbers to the letter that it starts with when written in english. For example,  $G(2) = t$  since two begins with the letter t.

- (a) [1] (§1.1 #30) Is the point  $(6, s)$  on the graph of  $G$ ? Why or why not?

yes  
 $\textcircled{1.5}$

6 is spelled "six" which starts with the letter s

$\textcircled{1.5}$

- (b) [1] (Graph Wks #4) Is  $G$  a function? Why or why not.

yes  
 $\textcircled{1.5}$

each number is spelled with a unique first letter.

$\textcircled{1.5}$

3. Let  $g$  be the piecewise defined graph shown below.

(a) [1] (§1.3 #56) Find  $g(3)$

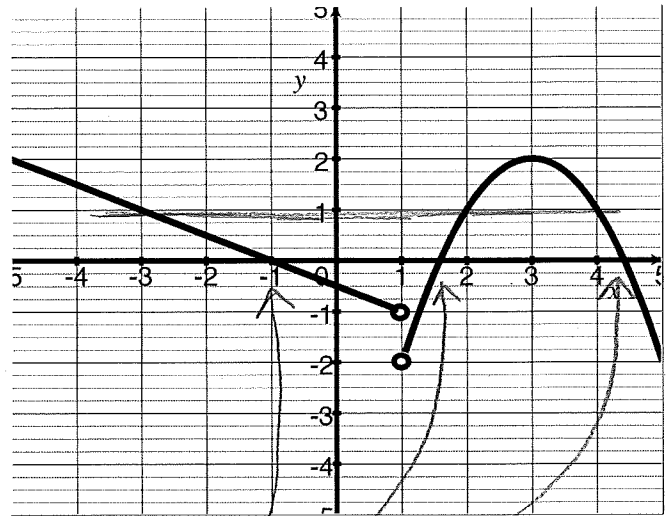
2

(b) [2] (Graph Wks #4)

Estimate  $x$  such that  $g(x) = 1$ .

$x = -3, 2, 4$   
 (1.5) (1.5) (1.5)

set  $y = 1$  (1.5)  
 look for  $x$



(c) [1] (WebHW2 #7) Identify or estimate the  $x$  intercept(s).

-1, 1.5, 4.5

Know what  $x$  intercept is (1.5)  
 got them all (1.5)

(d) [1] (Graph Wks #4) What is the range of  $g$ ?

$y$ -values (1.5)

If think the graph continues up to the left as well as down to the right  
 $(-\infty, \infty)$

or

If think the graph is only what is shown (including end points)  
 $[-2, 2]$