

1. [9 points] Consider the table of known values for the functions  $f(x)$  and  $h(x)$ , where  $f(x)$  is invertible.

$x$	-4	-2	-1	0	1	2	4
$f(x)$	2	3	0	-2	-1	4	5
$h(x)$	?	2	1	4	0	?	7

- a. [4 points] Find each of the following, or write N/A if a value does not exist or there is not enough information to find it.

(i)  $f^{-1}(0)$  **Answer:**  $f^{-1}(0) =$  \_\_\_\_\_

(ii)  $f(h(0))$  **Answer:**  $f(h(0)) =$  \_\_\_\_\_

(iii)  $h(g(1))$ , where  $g(x) = \log(x)$  **Answer:**  $h(g(1)) =$  \_\_\_\_\_

(iv)  $k(1)$ , where  $k(x) = -4f(2(x+1)) - 6$  **Answer:**  $k(1) =$  \_\_\_\_\_

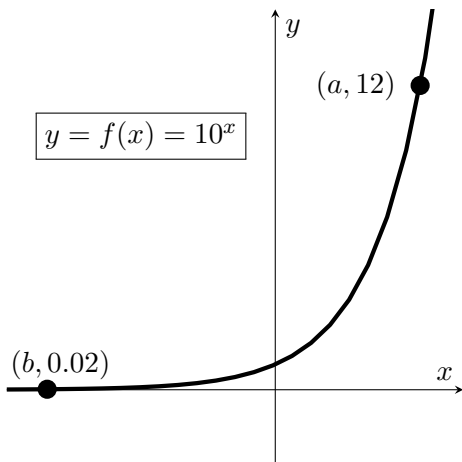
- b. [2 points] If  $f(h(2)) = 0$ , then what is  $h(2)$ ? **Answer:**  $h(2) =$  \_\_\_\_\_

- c. [3 points] Give a value for  $h(-4)$  that would guarantee that  $h(x)$  is *not* invertible and explain (in at most 1 sentence) why your value for  $h(-4)$  forces the function to be non-invertible.

**Answer:**  $h(-4) =$  \_\_\_\_\_

**Explanation:**

2. [4 points] Use the graph of  $y = 10^x$  below to decide whether each of the following statements is true (T), false (F), or there is not enough information to tell (NEI).



(i)  $a < 1$       T      F      NEI

(ii)  $b < -1$       T      F      NEI

(iii)  $\log(12) = a$       T      F      NEI

(iv)  $\log(b) = 0.02$       T      F      NEI