

Name _____

1. (3 points) Tables for the three functions, $f(x)$, $g(x)$, and $h(x)$, are shown below. Write the word **linear** by each function which could be linear, and write the words **not linear** by each function which cannot be linear.

x	$f(x)$
0	2
5	4
10	8
15	16

x	$g(x)$
0	0.02
5	0.17
10	0.32
15	0.47

x	$h(x)$
0	20
5	17
10	14
15	11

2. (1 point) Find a possible formula for any one of the functions in question 1.

3. (5 points) A biologist studied the growth of a rabbit population in a field. She found that the number of rabbits was approximated by the function $R(t) = 20 + 25t(0.92)^t$ where t represents the number of weeks since the start of her research.

(a) One finds that $R(14) \approx 129$. Write an English sentence to explain what this means to the biologist.

(b) What is the value of the vertical intercept on a graph of this function? Write an English sentence to explain what this means to the biologist. You don't need to graph the function.

(c) What was the average rate of change in the rabbit population during the first six weeks of her research? Round off your final answer to one place after the decimal point. Write an English sentence to explain what this means to the biologist.

4. (1 point) Which of the following graphs are concave down?