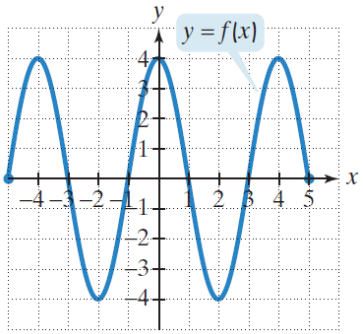
Name: _____

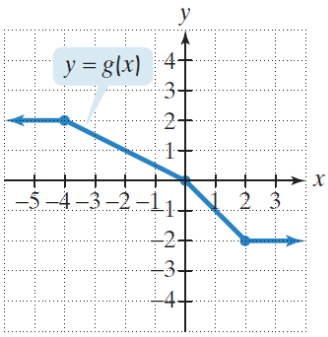
1.4 – FUNCTIONS REPRESENTED BY GRAPHS

Past due on: _____ Period: _____

Use the graph to evaluate each function or solve the function equation.



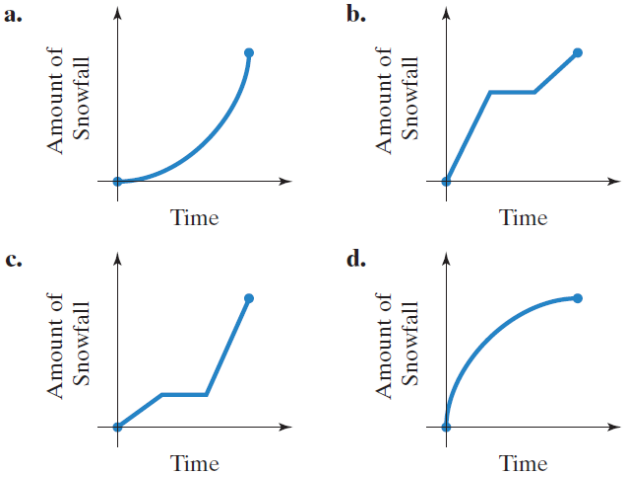
1. $f(-2)$
2. $f(4)$
3. $f(0)$
4. $f(-3)$
5. $f(x) = -4$
6. $f(x) = 0$
7. Identify the domain and range of $f(x)$.



8. $g(-4)$
9. $g(2)$
10. $g(-10)$
11. $g(10)$
12. $g(x) = 1$
13. $g(x) = -1$
14. Identify the domain and range of $g(x)$.

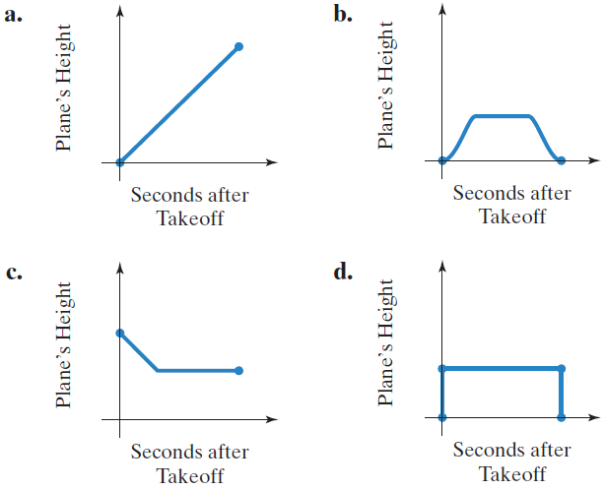
Each graph shows the amount of snowfall as a function of the time. Match the story with the correct graph.

15. As the blizzard got worse, the snow fell harder and harder.
16. The snow fell more and more softly.
17. It snowed hard, but then it stopped. After a short time, the snow started falling softly.
18. It snowed softly, and then it stopped. After a short time, the snow starting falling hard.

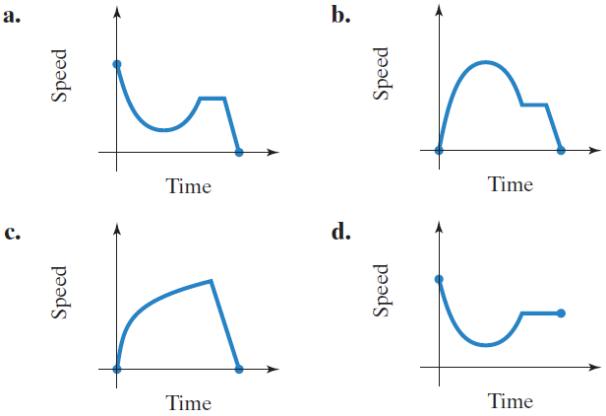


Select the graph that best illustrates each story.

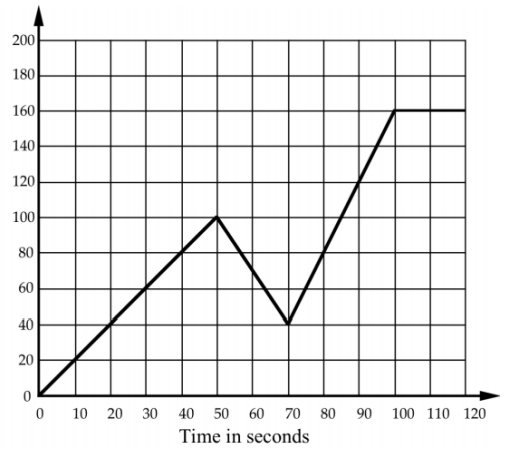
19. It took three flights for my family and I to travel to Dublin. On the first flight, we departed from Phoenix and flew to Toronto.



20. You begin your bike ride by riding down a hill. Then you ride up another hill. Finally you ride along a level surface before coming to a stop.



21. Every morning Tom walks along a straight road from his home to a bus stop. The graph shows his journey on one particular day.



a. Identify the following:

Input/independent quantity:

Output/dependent quantity:

Practical domain:

Practical range:

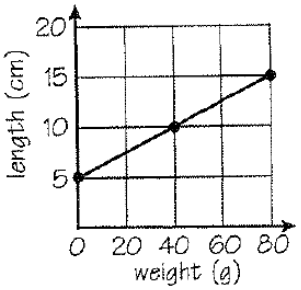
b. Which of the following intervals was Tom walking at the greatest speed? What was his speed during the interval?

$(0, 50)$ $(50, 70)$ $(70, 100)$ $(100, 120)$

c. Describe Tom's journey.

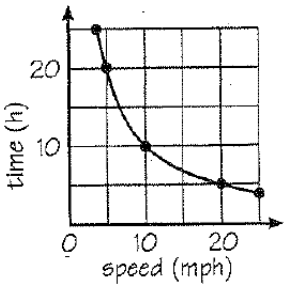
22. Suppose you are suspending weights from a spring. The length of the spring, L, is a function of the amount of weight, w, suspended from it.

Solve and interpret: $L(w) = 10$



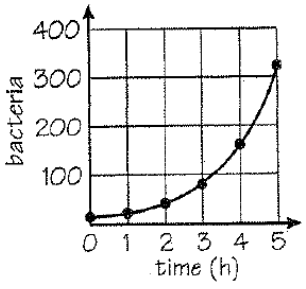
23. Suppose you plan to ride a bike 100 miles. The time, T, to complete the trip is a function of your average speed, s.

Evaluate and interpret: $T(20)$



24. Suppose you observe a colony of bacteria. At first there are 10 bacteria, but the number doubles every hour. The total number of bacteria, B, is a function of time, t (in hours).

After five hours, there are 320 bacteria. What is the average rate of increase in the number of bacteria each hour?



25. Suppose you are standing on a cliff overlooking the ocean, 100 feet above the water surface. You drop a rock. The rock's height (h) above the water is a function of time, t.

Determine the rock's rate of change over each of the intervals below. During what interval was the rock's speed the greatest.

$0 \le t \le 1.0$

$1.0 \le t \le 2.0$

$2.0 \le t \le 2.5$