

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

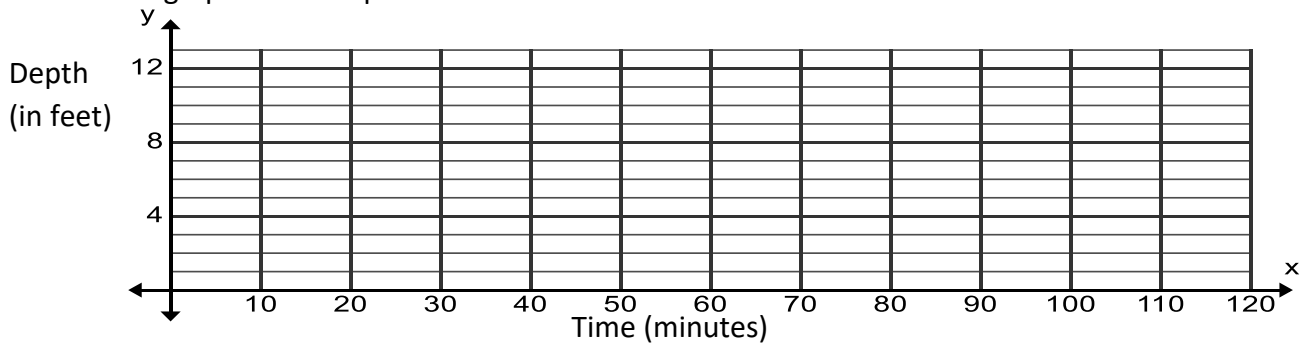
*Sec 1H Unit 5 Day 3 – Characteristics of Functions Classwork*

Matthew, Maria, and Sierra were floating in inner tubes down a river, enjoying their day. Matthew noticed that sometimes the water level was higher in some places than in others. Maria noticed there were times they seemed to be moving faster than at other times. Sierra laughed and said “Math is everywhere!” To learn more about the river, Matthew and Maria collected data throughout the trip.

Matthew created a table of values by measuring the depth of the water every ten minutes.

Time (in minutes)	0	10	20	30	40	50	60	70	80	90	100	110	120
Depth (in feet)	4	6	8	10	6	5	4	5	7	12	9	6.5	5

1. When is the river getting deeper (depth is increasing)?
2. When is the river getting more shallow (depth is decreasing)?
3. What is the deepest point of the river?  
When did the kids float over the deepest point?
4. How long were the kids floating on the river?
5. How deep is the river? Give your answer in words and also using a compound inequality.
6. Sketch a graph of the depth of the river over time.



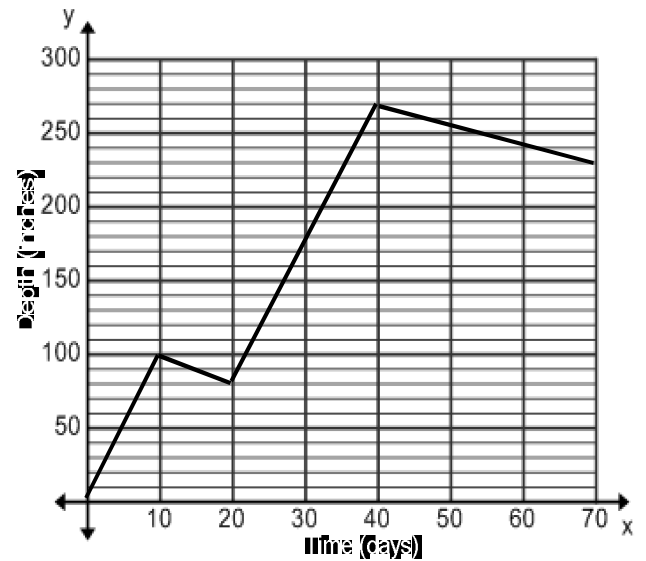
Identify these key features of the graph:

7. Domain:
8. Range:
9. Maximum Point(s):
10. Minimum Point(s):
11. What are the values of x when y is increasing?
12. What are the values of x when y is decreasing?

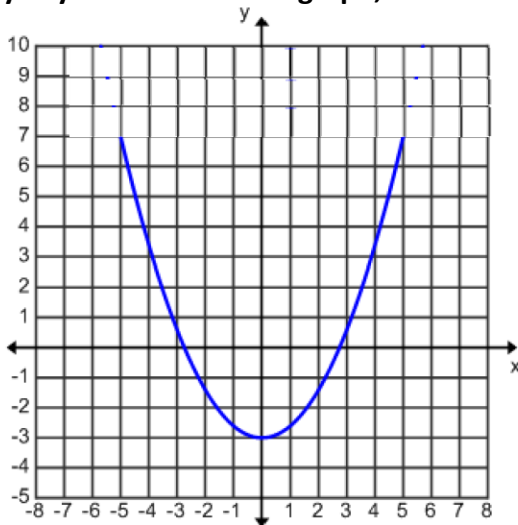
This graph may represent the snow level at a ski resort throughout the winter.

Identify these key features of the graph:

13. Domain:
14. Range:
15. Maximum Point(s):
16. Minimum Point(s):
17. When is y increasing? (What are the values of x?)
18. When is y decreasing? (What are the values of x?)



Identify key features for this graph, which is called a parabola:



19. Domain:
20. Range:
21. Maximum Point(s):
22. Minimum Point(s):
23. When is y increasing?
24. When is y decreasing?

25. Sketch a graph of a function with these features:

- Domain  $-1 < x < 9$
- Range  $5 < y < 12$
- A maximum point at  $(4, 11)$

