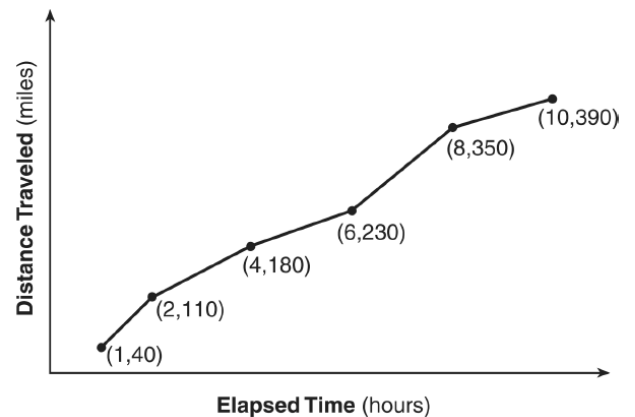


1.2.D2 – ANALYZING FUNCTIONS

1. A blizzard occurred on the East Coast during January 2016. Snowfall totals from the storm for Washington D.C. were recorded and are shown in the table. Which interval – 1 a.m. to 12 noon OR 6 a.m. to 3 p.m. – has the greatest rate of snowfall (in inches per hour)? Justify your answer with mathematics.

Washington, D.C.	
Time	Snow (inches)
1 am	1
3 am	5
6 am	11
12 noon	33
3 pm	36

2. The Jamison family kept a log of the distance they travelled during a trip, as represented by the graph shown. During which interval was their average speed the greatest? What was their speed during this interval?
- The first hour to the second hour
 - The second hour to the fourth hour
 - The sixth hour to the eighth hour
 - The eighth hour to the tenth hour



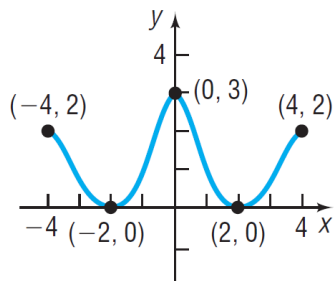
3. Which function, $f(x)$ or $g(x)$, has a greater rate of change on the interval $-2 < x < 4$? Justify your answer with mathematics.

x	$f(x)$
-4	0.3125
-3	0.625
-2	1.25
-1	2.5
0	5
1	10
2	20
3	40
4	80
5	160
6	320

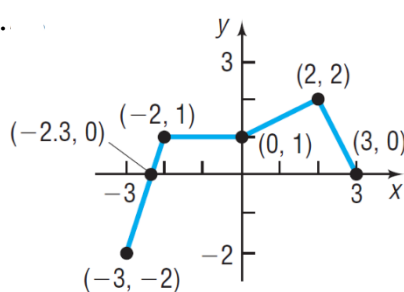
$$g(x) = 4x^3 - 5x^2 + 3$$

Identify the domain and the range of the function shown.

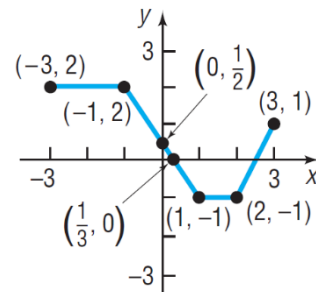
4.



5.



6.



7. Identify the range of the function $f(x) = 2x^2 - 8$ if its domain is $\{-2, 3, 5\}$.

8. What is the domain of the function $f(x) = 2x - 4$ if the range of the function is $\{-6, 0, 8\}$?

9. True or false? If false, explain your reasoning. If $f(x) = \frac{2}{5}x + 6$ and its domain is $15 \leq x \leq 20$, then the range of f is $12 \leq x \leq 14$.

10. For the function whose graph is shown, identify the domain, range, and find the average rate of change on the interval $-4 < x < 6$.

