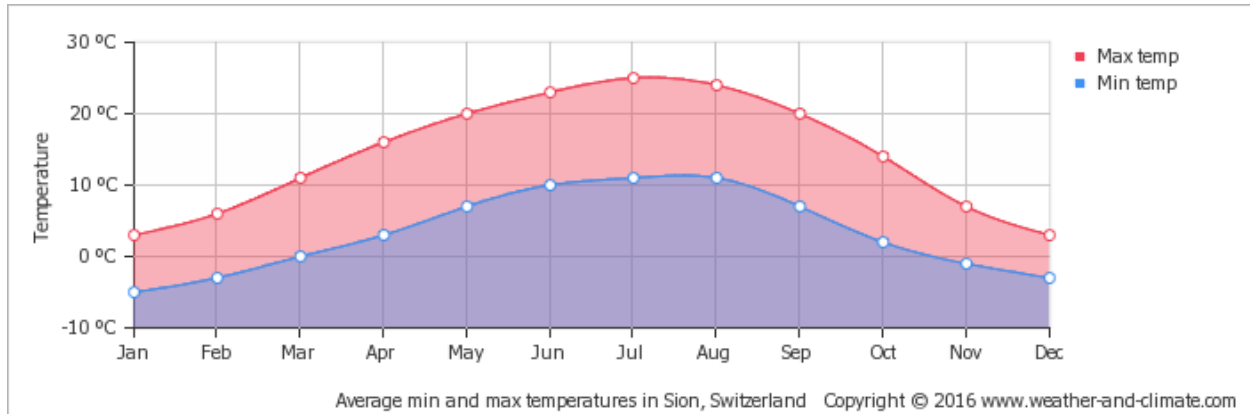


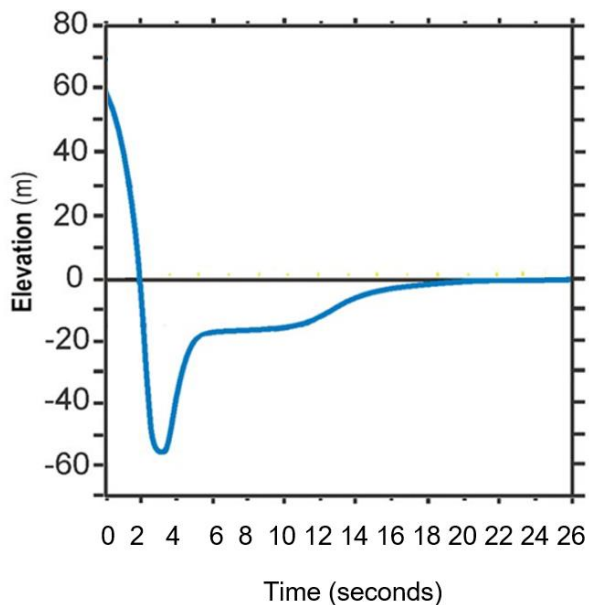
**Instructions:** For each of the following situations, answers the accompanying questions.

The maximum and minimum temperatures for a city in Switzerland are shown in the graph below. Use the graph to answer questions 1-3.



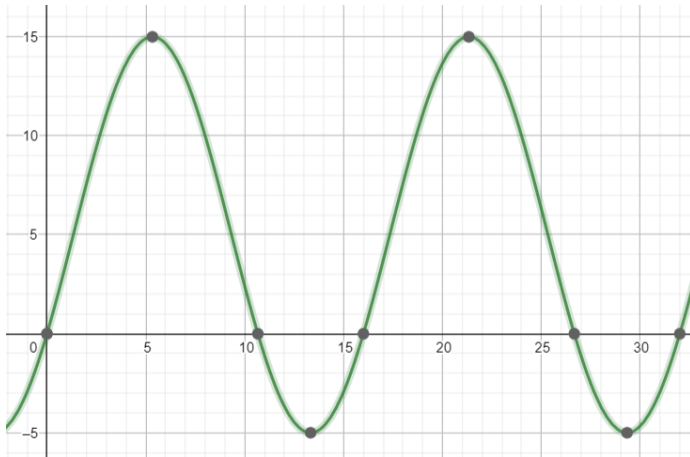
- Looking at the minimum temperature curve, when is the temperature below zero?
- Looking at the minimum temperature curve, when is the temperature above zero?
- Are the max temperatures always above or below  $0^{\circ}\text{C}$ ?

The following graph shows the elevation of a seal as it falls off a cliff into the ocean.



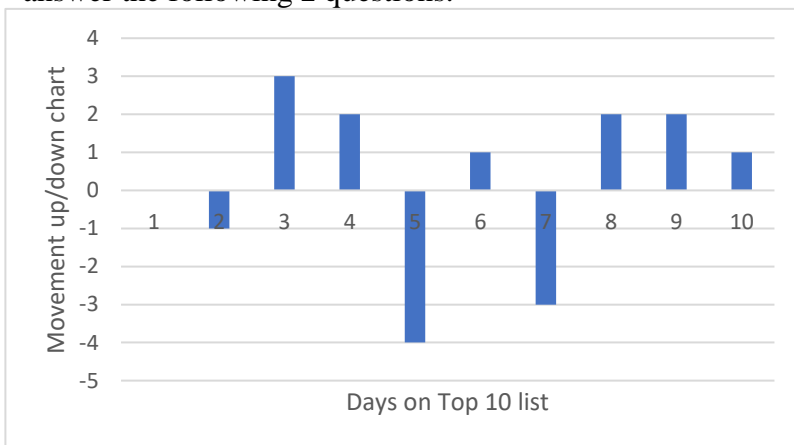
- When is the elevation of the seal decreasing?
- When is the seal above sea level (0 m)?
- At what time does the seal hit the water?
- When is the seal below sea level (0 m)?

A Ferris Wheel at the county fair loads on its passengers from a platform that is raised from ground level. The graph shows the height in feet of the car from the platform with respect to time in seconds of the last filled car as it makes its circuits around the wheel before the passengers exit the car.



8. During what time intervals is the car above the platform?
9. During what time intervals is the car going up?
10. During what time intervals is the car descending?
11. During what time intervals is the car below the platform?

Shakira's new song starts as number 5 on the top 10 pop songs. The next 10 days the song went up and down the chart. The bar graph shows how many places her song went up or down the chart. Use the bar graph to answer the following 2 questions.



12. On what days did Shakira's song move down the chart?
13. On what days did Shakira's song move up the chart?

**Instructions:** Simplify by distributing and combining like terms.

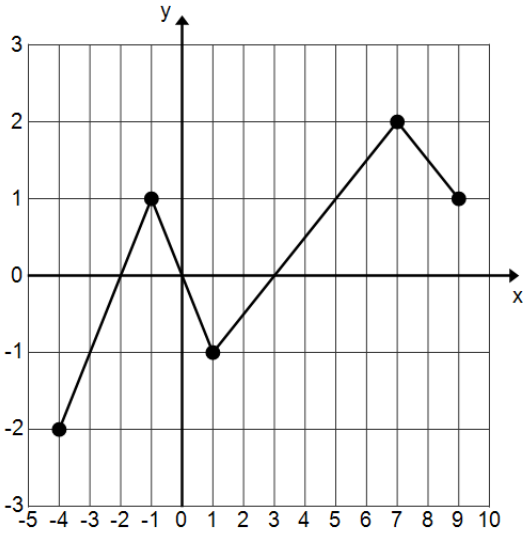
14.  $4x - (2x - 1)$

15.  $7x - 2(4x + 3)$

16.  $-3x - (2x + 4y + 10)$

**Instructions: Answer the following questions using inequalities where appropriate.**

17. Is the graph below a function? \_\_\_\_\_ If not, why? \_\_\_\_\_



Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Is the graph positive or negative from  $0 < x < 3$ ?

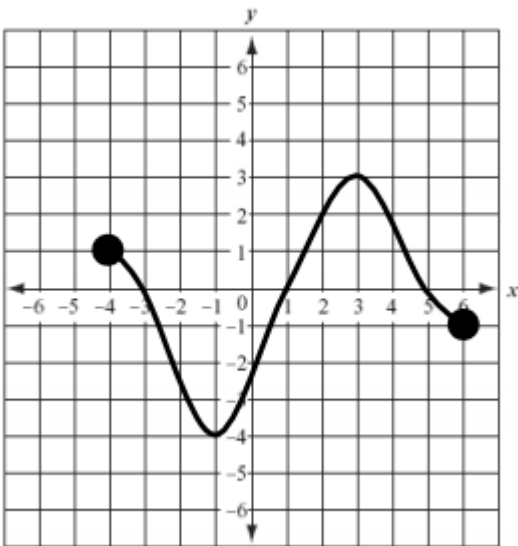
Is the graph positive or negative from  $-2 < x < 0$ ?

Increasing: \_\_\_\_\_

Decreasing: \_\_\_\_\_

y-intercept: \_\_\_\_\_

18. Is the graph below a function? \_\_\_\_\_ If not, why? \_\_\_\_\_



Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Positive: \_\_\_\_\_

Negative: \_\_\_\_\_

Increasing: \_\_\_\_\_

Decreasing: \_\_\_\_\_

x-intercepts: \_\_\_\_\_ y-intercept: \_\_\_\_\_

**List the domain and range for each relation and decide if it is a function.**

19.  $\{(3,2), (7,5), (5,2), (1,-4)\}$

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_

20.  $\{(5,0), (-2,0), (3,0), (1,0)\}$

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_