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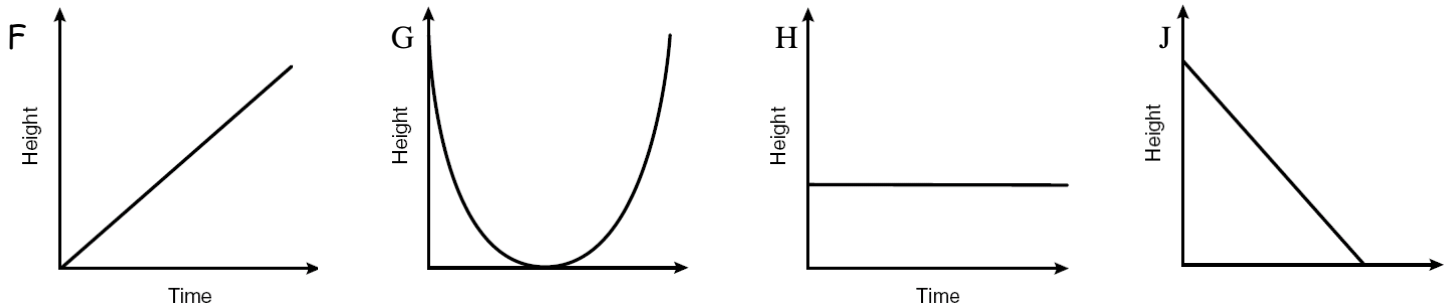
Date _____

Student Expectations A.1.E Questions

1. Which is always a correct conclusion about the quantities in the function $y = x + 4$?

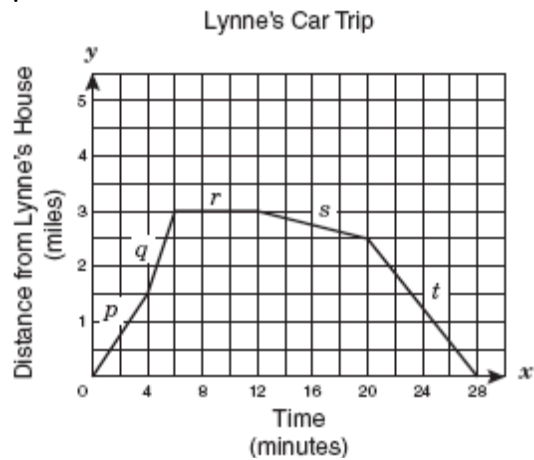
- A The variable x is always 4 more than y .
- B When the value of x is negative, the value of y is also negative.
- C The variable y is always greater than x .
- D As the value of x increases, the value of y decreases.

2. Which graph best represents the relationship between the height of a burning candle and the amount of time that passes as the candle burns?



3. The graph below represents Lynne's car trip from her house to the mall and then back to her house. If each section of the graph represents part of Lynne's trip, which part of the trip took the least amount of time?

- A r
- B p
- C q
- D s



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Student Expectations A.1.E Questions

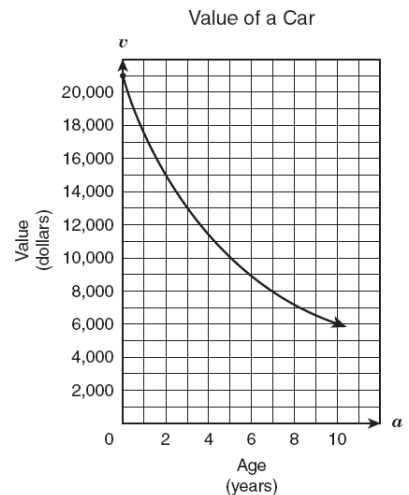
4. The kinetic energy of a car can be described by the function $KE = \frac{1}{2}mv^2$, in which the constant m is the mass of the car and v is the car's velocity. If the velocity keeps increasing, the kinetic energy will —

- A remain constant
- B continually increase
- C increase and then become constant
- D decrease to zero

5. The graph below shows the relationship between the value of a car in dollars and the age of the car in years.

According to the graph, which of the following statements appears to be true?

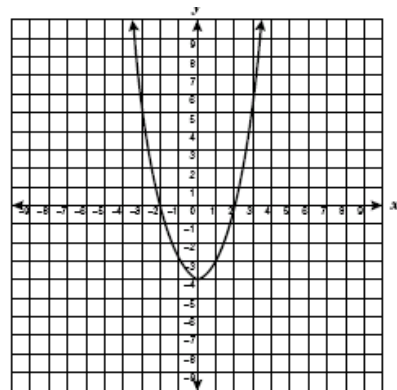
- A The value of the car decreased by \$1,000 per year.
- B The value of the car decreased by \$2,000 per year.
- C The value of the car decreased more from Year 9 to Year 10 than in any other year.
- D The value of the car decreased more from Year 0 to Year 1 than in any other year.



6. Jake studied the parabola shown below.

Which is an accurate conclusion that Jake could make about this parabola?

- A The vertex is at $(-2, 0)$.
- B The minimum value is at $(0, -4)$.
- C The maximum value is at $(2, 0)$.
- D The axis of symmetry is the x -axis.

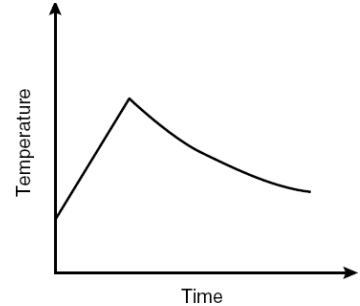


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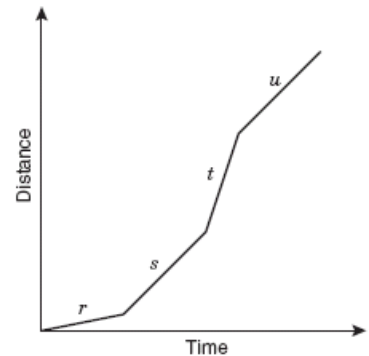
Student Expectations A.1.E Questions

7. The graph below best represents which of the following relationships between temperature and time?



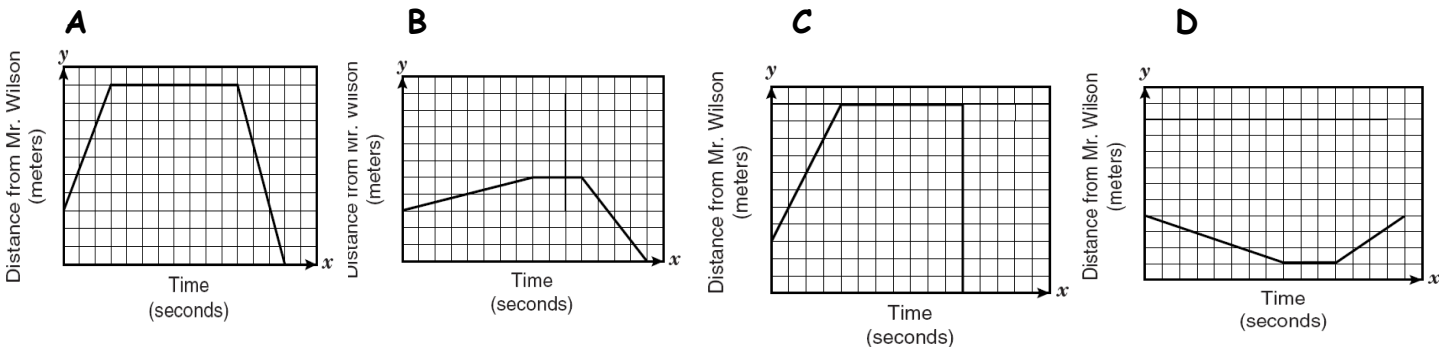
- A Oven temperature while a cake is baking
- B Temperature of water that is heated on a stove, removed, and then allowed to cool
- C Temperature of a container of hot tea after placing several cubes of ice in it
- D Room temperature of a gym after the air conditioner is turned on

8. The graph below represents Cheyenne's bicycle trip from her house to a friend's house. On which segment of the graph does it appear that Cheyenne was riding her bicycle at the slowest pace?



- A r
- B s
- C t
- D u

9. Mr. Wilson asked his class to sketch a graph that would represent the following activity: "Start 3 meters away from me and slowly walk away for 8 seconds. Then stand still for 3 seconds and walk quickly toward me for 4 seconds." Which graph best represents this activity?



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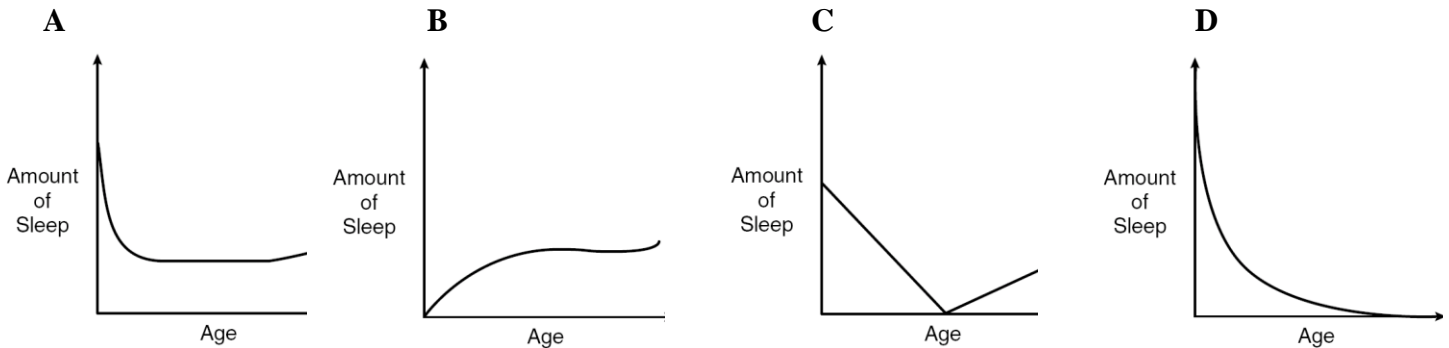
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Student Expectations A.1.E Questions

10. To buy a membership at a recreation center, people must pay a one-time registration fee plus a regular monthly fee. The table below shows the total amount a person pays, including the registration fee, for different numbers of months of membership. According to the information in the table, which of the following statements is true?

- A The monthly fee is \$50.
- B The monthly fee is \$37.50.
- C The registration fee is \$75.
- D The registration fee is \$50.

11. Gina did a research project on how age affects sleep patterns. She concluded that as people age, they sleep fewer hours until a point in adulthood when the number of hours remains constant. Gina also found that after the age of 70 the amount of time spent sleeping increases slightly. Which graph best shows Gina's results?



12. Karen jogs at a steady pace up a hill in her neighborhood. She then runs down the hill, and her speed increases. Which graph best describes this situation?

