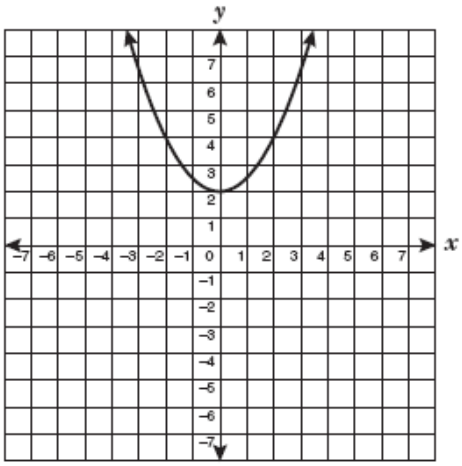
Name _____ Class _____ Date _____

Algebra 1 STAAR EOC Review #2

Reporting Category 2: Properties and Attributes of Functions A.2abcd

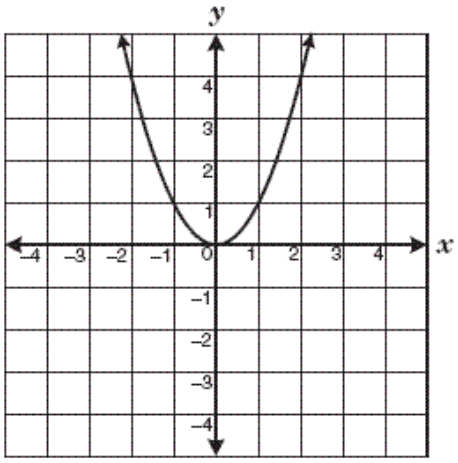
RC2 A.02A

1. Which equation is the parent function of the graph represented below?



A. $y = |x|$
B. $y = x$
C. $y = x^2$
D. $y = -\sqrt{x}$

2. Which type of parent function is represented by the function graphed below?



F. Exponential
G. Absolute value
H. Linear
J. Quadratic

3. What is the solution set for the equation $4x^2+11x-10= -7$?

A. {-3, 0.25}
B. {-3.47, 0.72}
C. {3, -0.25}
D. {-3.85, 1.1}

4. Which of these are characteristics of the parent function of a quadratic equation?

I. The parent function of a quadratic equation has the vertex at (0, 0).

II. The parent function of a quadratic equation opens downward.

III. The parent function of a quadratic equation has the y-axis as its line of symmetry.

F. I and II only
G. I and III only
H. II and III only
J. I, II, and III

5. Mrs. Westfield asked her students to identify the parent function of $y = x^2 - 3$. Which of the following student responses is correct?

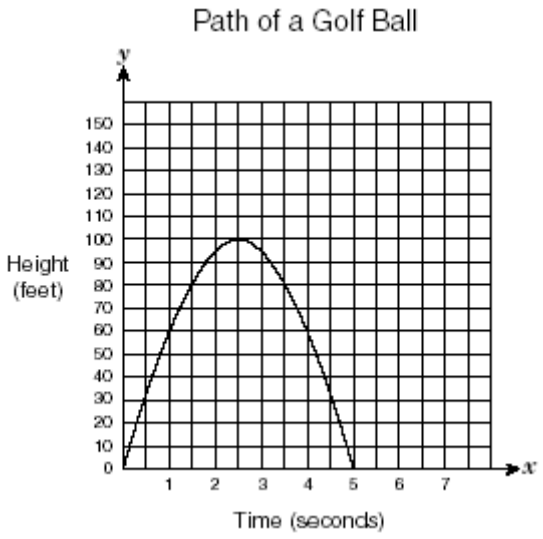
A. $y = |x|$
B. $y = x$
C. $y = x^2$
D. $y = -\sqrt{x}$

RC 2 A.02B

6. What is the range of the function $y = x^2 - 5$ if the domain is {2, 3, 4}?

F. {−3, −2, −1}
G. {−9, −14, −21}
H. {−1, 4, 11}

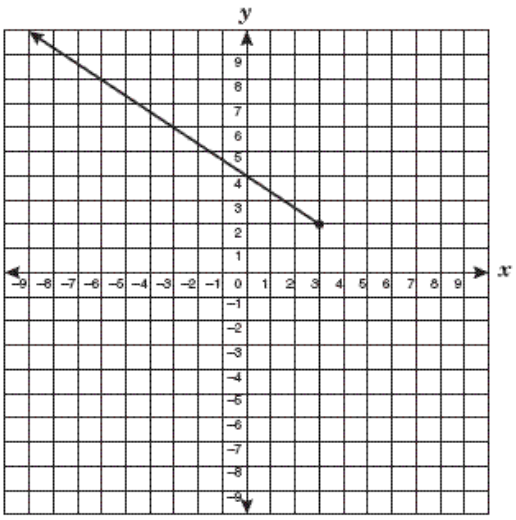
7. The graph shows the path of a golf ball.



What is the range of this function?

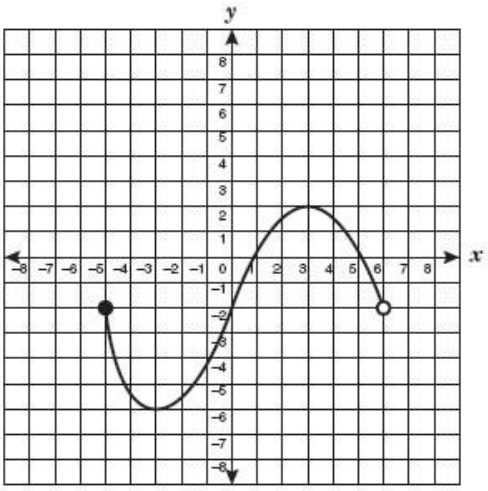
A. $0 < y < 100$
B. $0 \leq y \leq 100$
C. $0 \leq x \leq 5$
D. $0 < x < 5$

8. Which inequality best describes the range of the function represented by this graph?



F. $y \leq 3$
G. $y \leq 2$
H. $y \geq 3$
J. $y \geq 2$

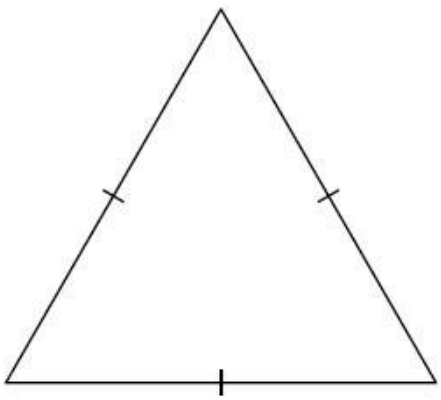
9. Mr. Maxwell asked his students to identify the domain represented by the function graphed below.



Which of the following student responses is correct?

A. $-5 \leq x < 6$
B. $-6 \leq x \leq 2$
C. $-5 \leq x < -2$
D. Not here

10. The perimeter of an equilateral triangle is 36 meters or less.

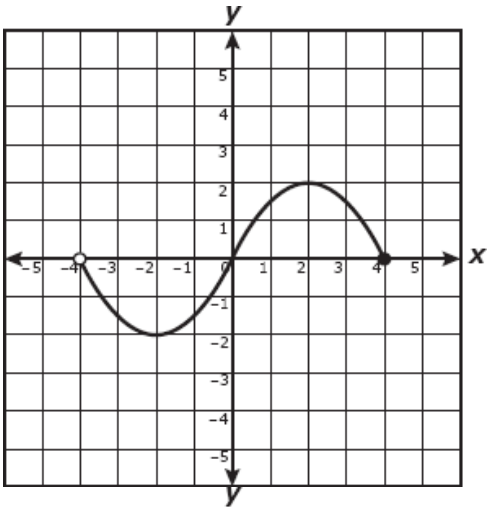


Which set describes the domain for *l*, the length of one side of the triangle?

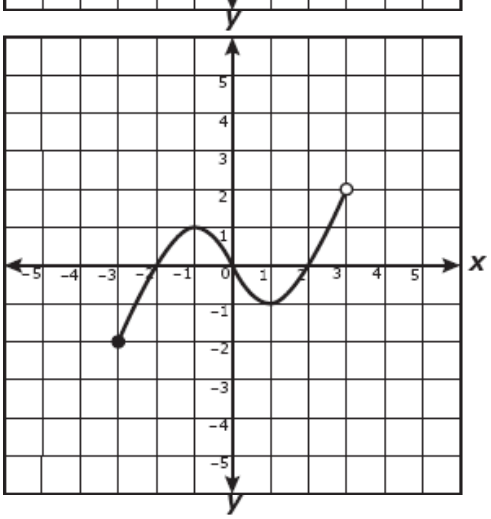
F. $\{0 < l \leq 3\}$
G. $\{0 < l \leq 6\}$
H. $\{0 < l \leq 12\}$
J. $\{0 < l \leq 36\}$

11. Which graph has a domain of $-4 < x \leq 4$ and a range of $-2 \leq y \leq 2$?

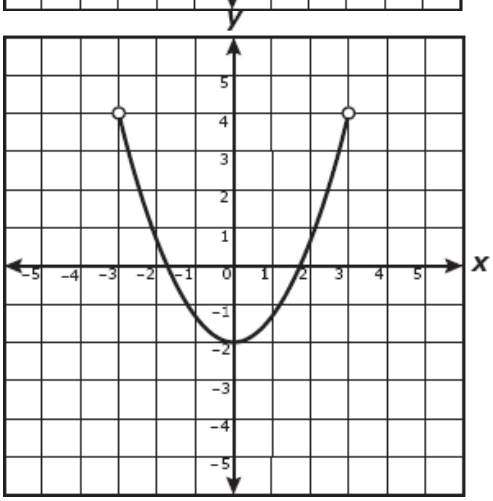
A.



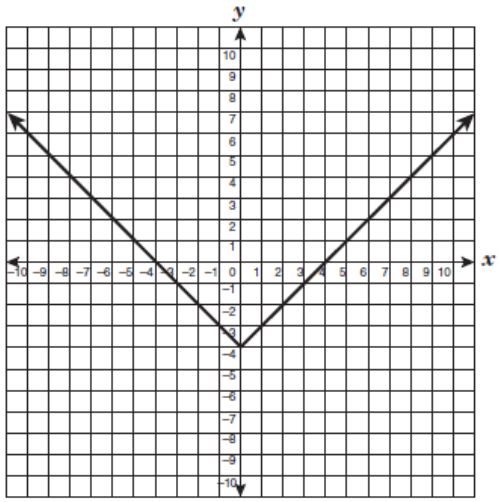
B.



C.



12. Which of the following best represents the range of the function shown below?



F. The range is all real numbers.
G. The range is all real numbers greater than or equal to 4.
H. The range is all real numbers greater than or equal to zero.
J. The range is all real numbers greater than or equal to −4.

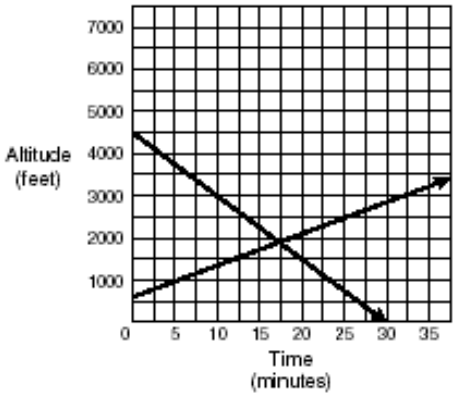
RC 2 A.02C

13. Which statement is true for the graph below?

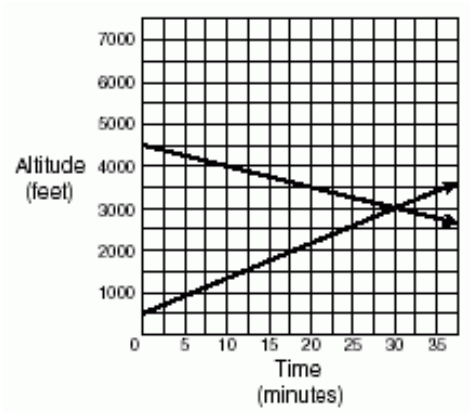
A. Ms. Goodlett will earn $500 if she sells $5000 worth of merchandise.
B. Mr. Murphy will not earn any money if he does not sell any merchandise.
C. Mr. Laster will earn $1000 if he sells $1000 worth of merchandise.
D. Ms. Cho will earn $700 if she sells $5000 worth of merchandise.

14. At the Dallas-Fort Worth International Airport, a DC-10, at 4500 feet, is descending toward the east runway at a rate of 150 feet per minute, and a 727, at 600 feet, is climbing at a rate of 75 feet per minute. Which graph shows when the two planes will be at the same altitude?

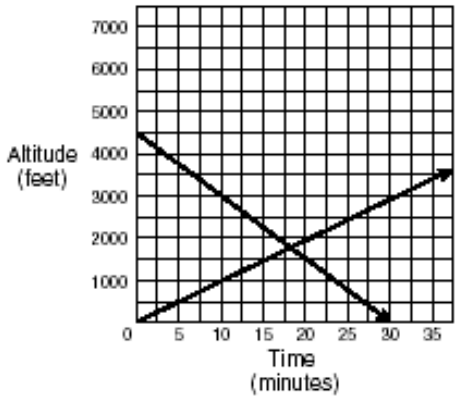
F.



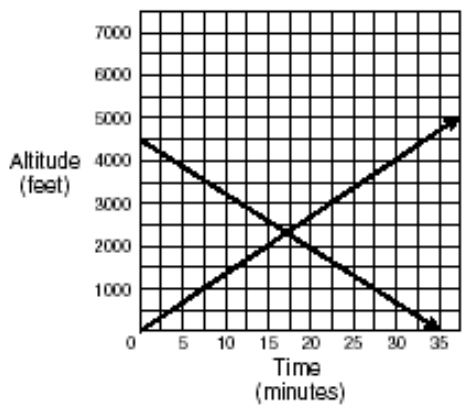
G.



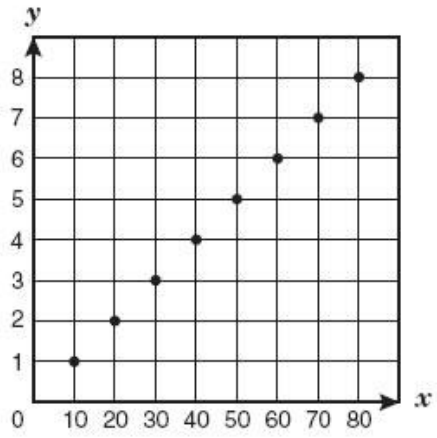
H.



J.



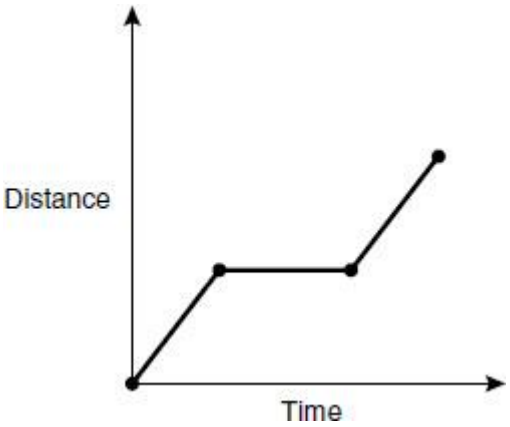
15. Look at the graph below.



Which is the best interpretation of this graph?

A. Jorge earns $20 for each hour worked.
B. For every 10 pieces of candy Stacey buys, she pays $1.
C. For every 10 students at a dance, 2 teachers are needed as chaperones.
D. A runner runs at a constant rate of 2 miles every 30 minutes.

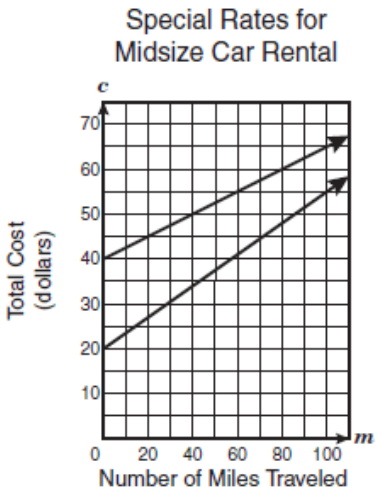
16. Which situation could this graph best represent?



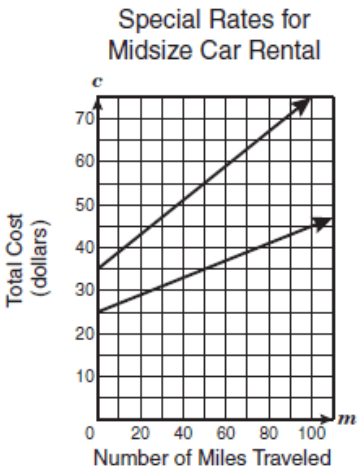
F. A boy ran for 10 minutes, rested on a bench for 15 minutes, and then ran for 10 more minutes.
G. A boy ran for 10 minutes, walked for 15 minutes, and then ran for 10 more minutes.
H. A boy ran for 10 minutes, rested on a bench for 15 minutes, and then walked for 10 more minutes.
J. A boy walked for 10 minutes, ran for 15 minutes, and then walked for 10 more minutes.

17. Two car-rental companies are advertising special rates for a midsize car. Wendell's Motor Rentals is advertising a rate of $35 a day plus $0.20 per mile traveled, tax included. Marina's Car Rentals is advertising a rate of $25 a day plus $0.40 per mile traveled, tax included. Which graph correctly compares the cost of renting a midsize car for one day from each company?

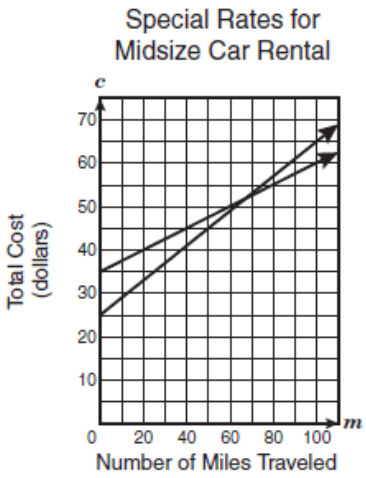
A.



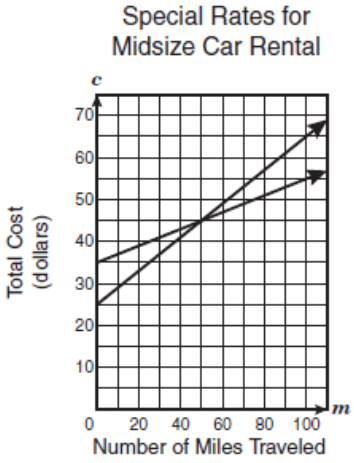
C.



B.



D.



RC 2 A.02D

18. Monica collected data of the ages and heights of a random sample of sixth, seventh, and eighth grade students at her school. If she plots the data on a scatterplot, what relationship will she most likely see between age and height?

F. A negative correlation
G. No correlation
H. A positive correlation
J. A constant correlation

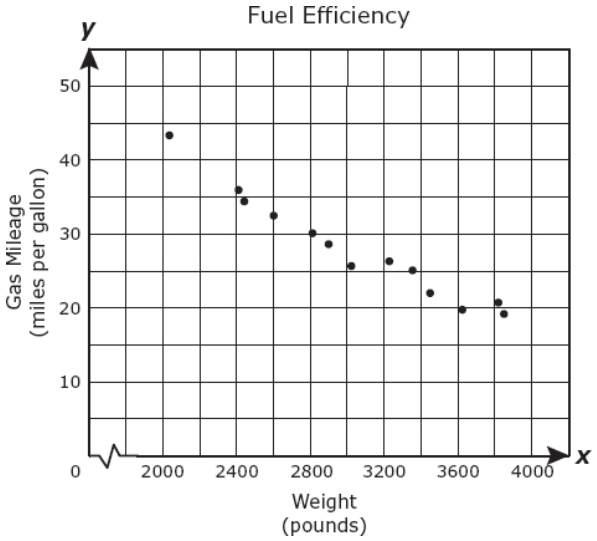
19. The energy output from a chemical reaction is dependent on the amount of chemicals used. The table shows this relationship.

Amount of Chemicals (moles)	Energy Output (joules)
5	20
8	32
12	48
15	60

What is a reasonable amount of energy output from the reaction of 32 moles of the chemicals?

A. 77 joules
B. 92 joules
C. 110 joules
D. 128 joules

20. Look at the scatterplot below. It shows the gas mileage and weight of different vehicles.



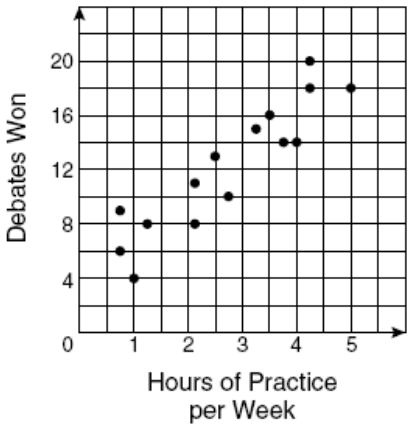
Which of the following is the best interpretation of this scatterplot?

F. As the weight of the vehicle increases, the gas mileage stays the same.
G. Vehicles that weigh the least have higher gas mileage.
H. Vehicles that weigh the most have higher gas mileage.

21. Which situation best describes a positive correlation?

A. The amount of rainfall on Fridays
B. The height of a candle and the amount of time it stays lit
C. The price of a pizza and the number of toppings added
D. The temperature of a cup of hot chocolate and the length of time it sits

22. The coaches of a group of debate teams answered a survey about hours of debate team practice and number of team wins. The graph shows the results of this survey.

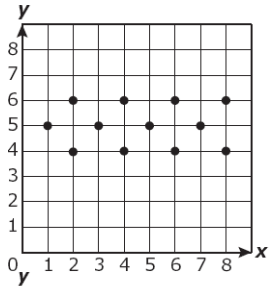


Based on these results, if a team practices 4 hours per week next season, which is the best estimate of the number of debates the team can expect to win?

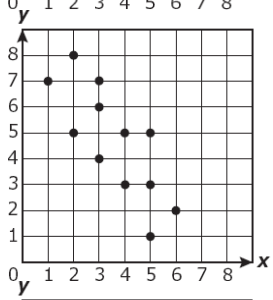
F. 1
G. 12
H. 16
J. 20

23. Look at the scatterplots below. Which best represents a negative trend?

A.



B.



C.