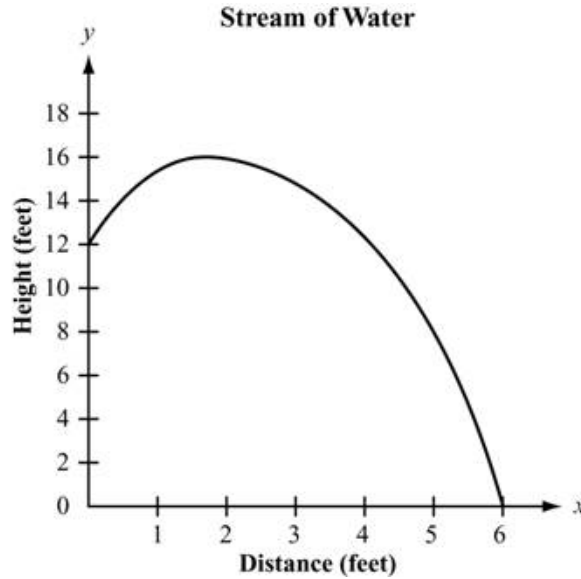


Name: _____

Date: _____

1. At a water park, a stream of water is shot into the air from the top of a pole that is 12 feet tall. The function graphed on this coordinate grid represents the path of the stream of water from the top of the pole to the ground.

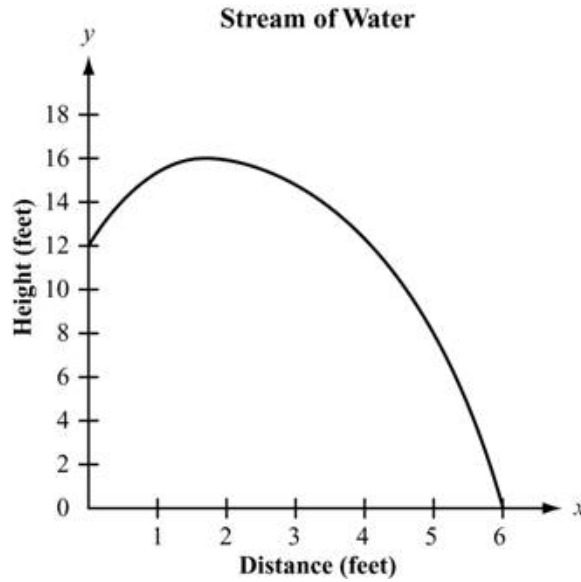


What is the domain of the function that represents the path of the stream of water from the top of the pole to the ground?

- A. - 2 to 6
- B. - 2 to 16
- C. 0 to 6
- D. 0 to 16

2.

At a water park, a stream of water is shot into the air from the top of a pole that is 12 feet tall. The function graphed on this coordinate grid represents the path of the stream of water from the top of the pole to the ground.

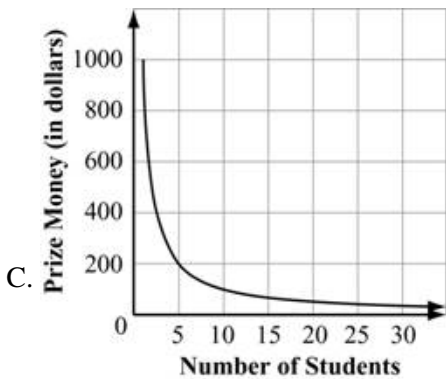
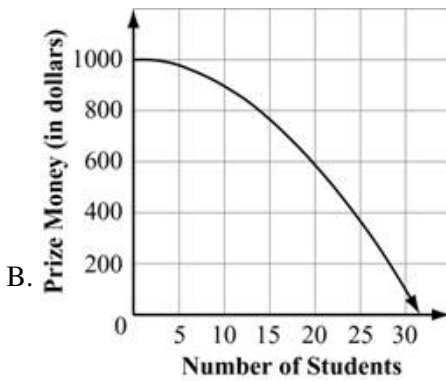
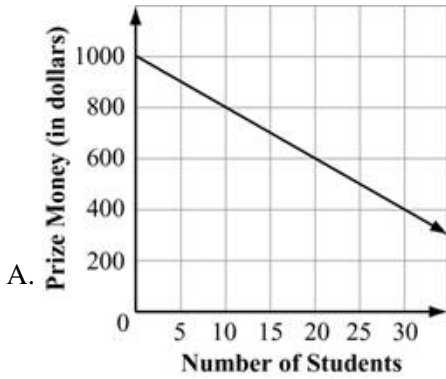


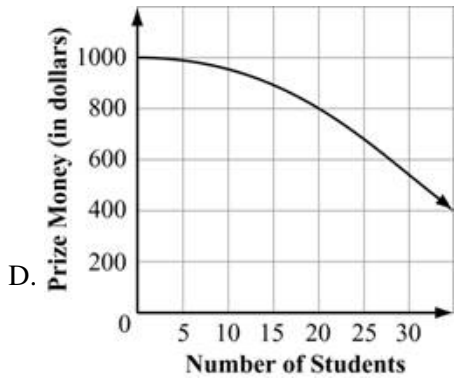
What is the range of the function that represents the path of the stream of water from the top of the pole to the ground?

- A. $-\infty$ to 6
 - B. $-\infty$ to 16
 - C. 0 to 6
 - D. 0 to 16
-

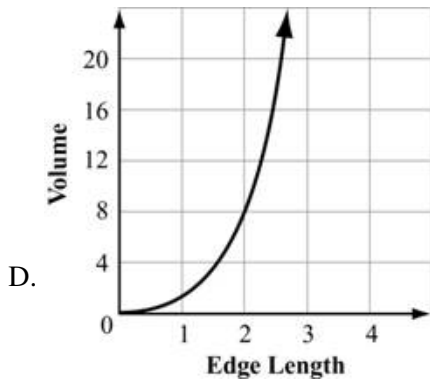
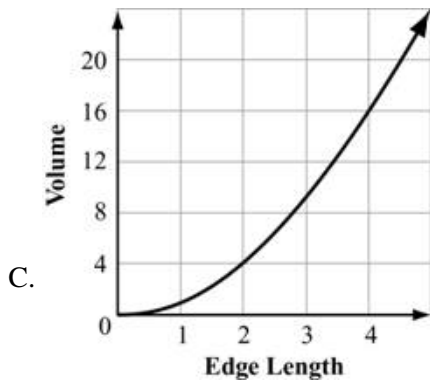
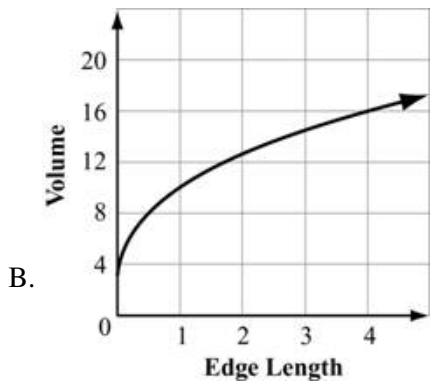
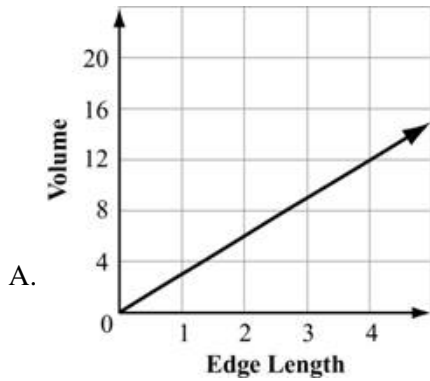
3. A group of students is entering a contest to win \$1000. The students plan to divide the money equally.

Which graph best describes the relationship between the number of students in the group and the amount of prize money each student wins?

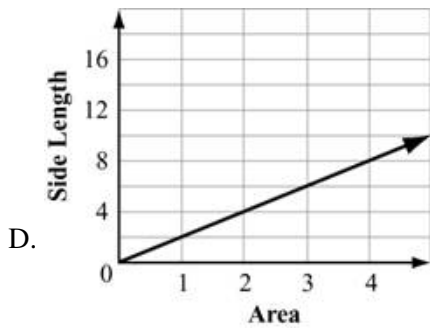
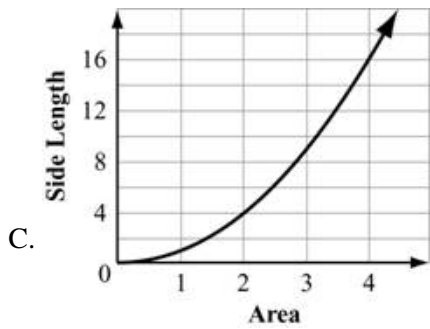
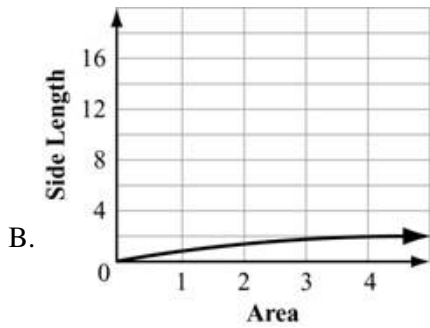
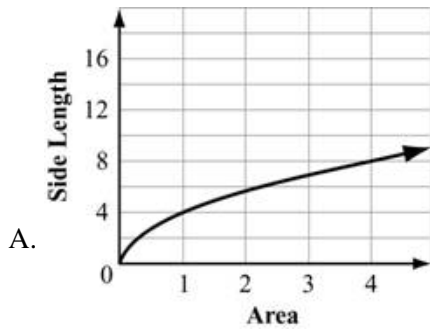




4. The volume of a cube is a function of the length of its edges. Which graph models this relationship?



5. The side length of a square is the square root of its area. Which graph represents side length as a function of area?



6. The function $g(x) = 6x^2$ represents the surface area of a cube that has side length x . This function is a transformation of $f(x) = x^2$.

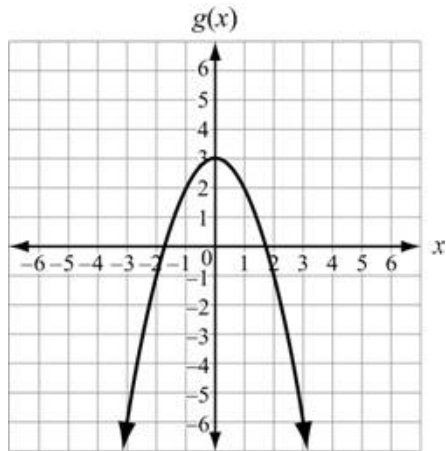
Which phrase describes this transformation?

- A. stretch by a factor of 6
 - B. shrink by a factor of 6
 - C. shift up of 6 units
 - D. shift down of 6 units
-

7. The graph of $f(x) = |x|$ is translated 2 units down on a coordinate plane. Which function represents the result of this translation?

- A. $g(x) = 2 - |x|$
 - B. $g(x) = |x| - 2$
 - C. $g(x) = -2|x|$
 - D. $g(x) = 2|x|$
-

8. Which function is graphed on this coordinate plane?



- A. $g(x) = -x^2 - 3$
- B. $g(x) = -\frac{1}{3}x^2$
- C. $g(x) = -x^2 + 3$
- D. $g(x) = -3x^2$

9. Which function represents the reflection of $f(x) = |x| + 3$ across the x -axis?

- A. $g(x) = |x| + 3$
- B. $g(x) = |x| - 3$
- C. $g(x) = -|x| + 3$
- D. $g(x) = -|x| - 3$

10. A function is described below.

☞☞☞ The function has a maximum point at $(0, 0)$.

☞☞☞ The function increases at a nonconstant rate for $x < 0$.

☞☞☞ The function decreases at a nonconstant rate for $x > 0$.

Which function could match this description?

A. $f(x) = x^2$

B. $f(x) = -x^2$

C. $f(x) = \sqrt{x}$

D. $f(x) = -|x|$

11. What is the domain of $f(x) = \frac{2}{x-3}$?

A. all real numbers

B. all real numbers except 3

C. all real numbers except -3

D. all real numbers except 3 and -3

12. Which function has zeros at -2 and 4?

A. $f(x) = x^2 + 2x - 8$

B. $f(x) = x^2 - 2x + 4$

C. $f(x) = x^2 - 2x - 8$

D. $f(x) = x^2 + 2x - 4$

13. **This table lists the coordinates of some points on the graph of a quadratic function.**

x	y
-6	11
-5	3
-4	-3
-3	-7
-2	-9
-1	-9
0	-7
1	-3

Which of the following describes the location of a zero of the graph of the function?

- A. between - 8 and - 6
 - B. between - 5 and - 4
 - C. between - 2 and - 1
 - D. between - 1 and 1
-

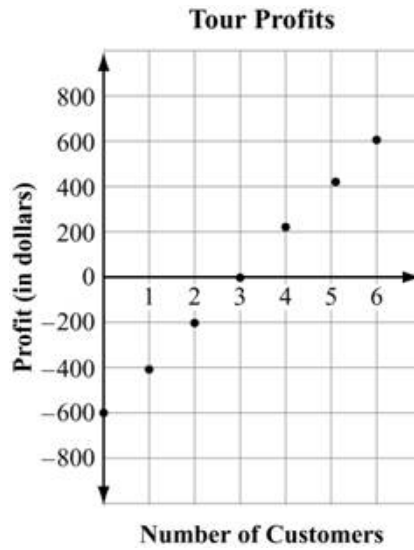
14. This graph shows the number of minutes a student spent bike riding during the past 7 days.



Which of the following is the domain of the graph?

- A. $0 \leq x \leq 7$
 - B. $0 \leq x \leq 180$
 - C. $\{30, 60, 90, 120, 150, 180\}$
 - D. $\{1, 2, 3, 4, 5, 6, 7\}$
-

15. This graph shows the relationship between a touring company's profit and the number of customers on a tour for up to 6 customers.



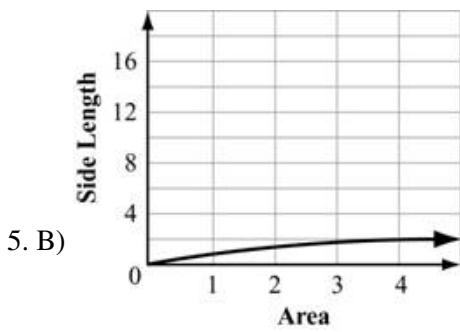
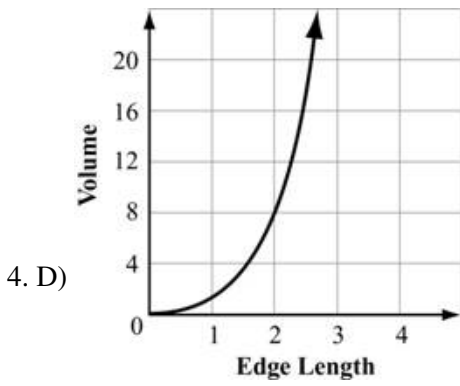
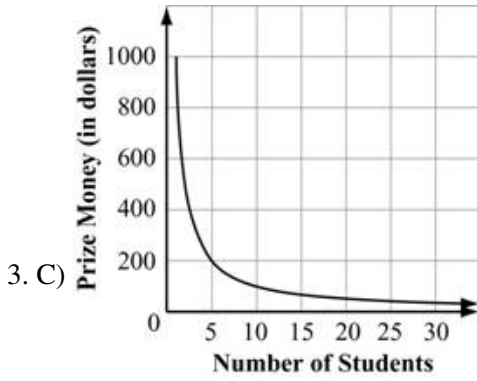
What does the graph's x -intercept represent in this situation?

- A. the rate of change of the company's profit
- B. the amount of money the company spent on the tour
- C. the number of customers needed for the company to break even
- D. the number of customers needed for the company to make a profit

Answer Key

1. C) 0 to 6

2. D) 0 to 16



6. A) stretch by a factor of 6

7. B) $g(x) = |x| - 2$

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8. C) $g(x) = -x^2 + 3$

9. D) $g(x) = -|x| - 3$

10. B) $f(x) = -x^2$

11. B) all real numbers except 3

12. C) $f(x) = x^2 - 2x - 8$

13. B) between - 5 and - 4

14. D) $\{1, 2, 3, 4, 5, 6, 7\}$

15. C) the number of customers needed for the company to break even