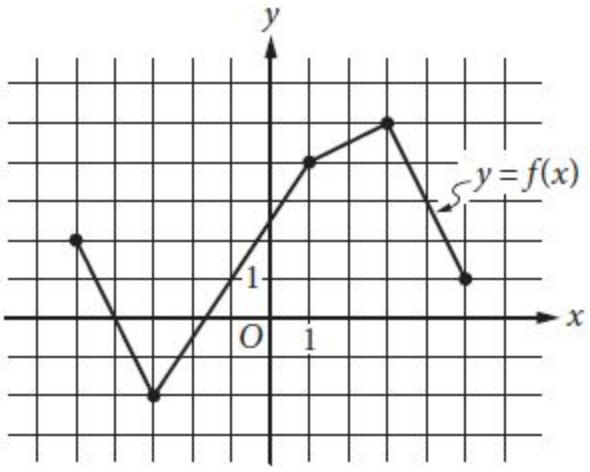
17



The complete graph of the function f is shown in the xy-plane above. For what value of x is the value of $f(x)$ at its minimum?

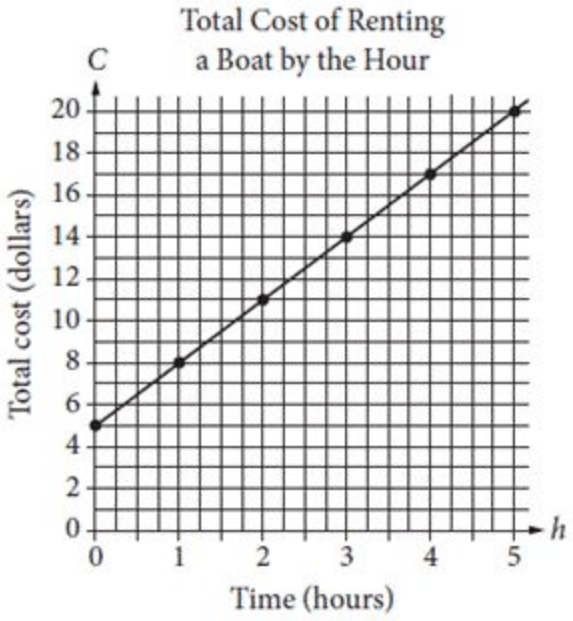
A) -5

B) -3

C) -2

D) 3

Questions 15 and 16 refer to the following information.



The graph above displays the total cost C, in dollars, of renting a boat for h hours.

15

What does the C-intercept represent in the graph?

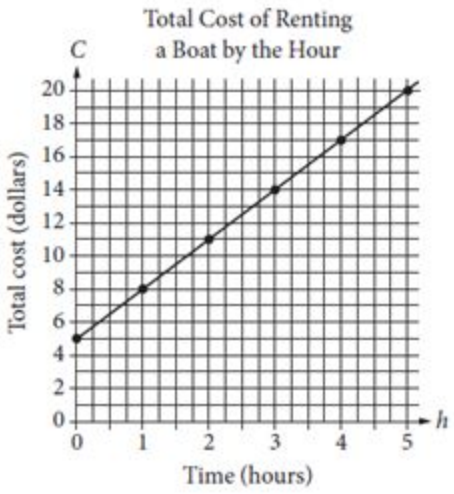
A) The initial cost of renting the boat

B) The total number of boats rented

C) The total number of hours the boat is rented

D) The increase in cost to rent the boat for each additional hour

Questions 15 and 16 refer to the following information.



The graph above displays the total cost C, in dollars, of renting a boat for h hours.

16

Which of the following represents the relationship between h and C ?

A) $C = 5h$

B) $C = \frac{3}{4}h + 5$

C) $C = 3h + 5$

D) $h = 3C$

12

In the xy-plane, the graph of function f has x-intercepts at -3, -1, and 1. Which of the following could define f ?

A) $f(x) = (x - 3)(x - 1)(x + 1)$

B) $f(x) = (x - 3)(x - 1)^2$

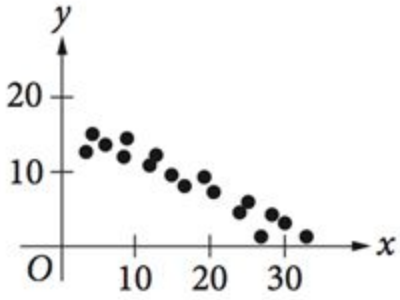
C) $f(x) = (x - 1)(x + 1)(x + 3)$

D) $f(x) = (x + 1)^2(x + 3)$

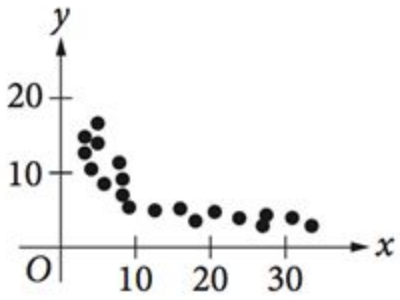
15

Which of the following scatterplots shows a relationship that is appropriately modeled with the equation $y = ax^b$, where a is positive and b is negative?

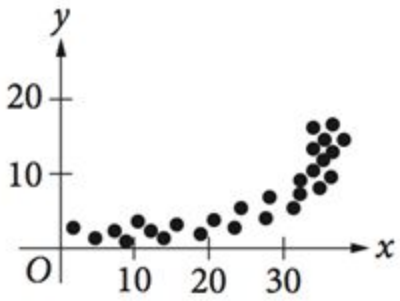
A)



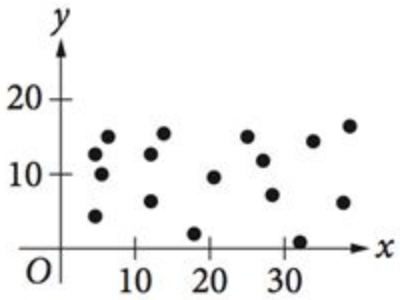
B)



C)



D)



16

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

If $x > 0$, what is one possible solution to the equation above?

12

$$y = a(x - 2)(x + 4)$$

In the quadratic equation above, a is a nonzero constant. The graph of the equation in the xy-plane is a parabola with vertex (c, d). Which of the following is equal to d ?

A) $-9a$

B) $-8a$

C) $-5a$

D) $-2a$

10

In the xy-plane, the parabola with equation $y = (x - 11)^2$ intersects the line with equation $y = 25$ at two points, A and B. What is the length of $\overline{AB}$?

A) 10

B) 12

C) 14

D) 16