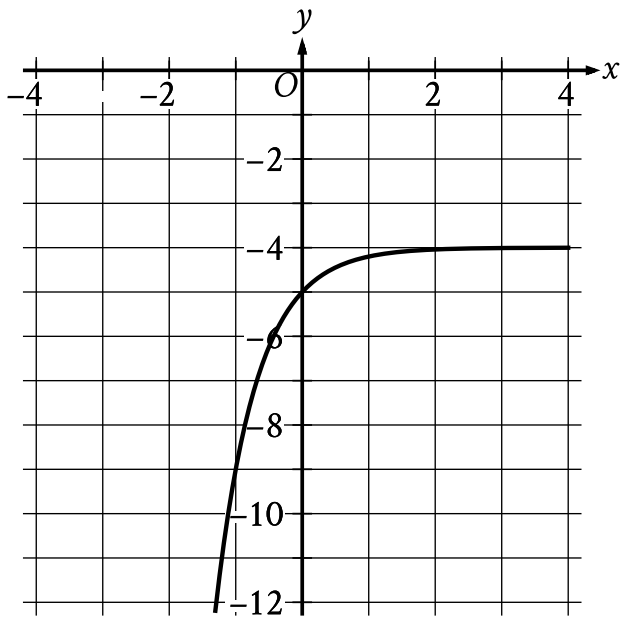
Question ID 6abec9a8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 6abec9a8



What is the y-intercept of the graph shown?

A. $(-1, -9)$

B. $(0, -5)$

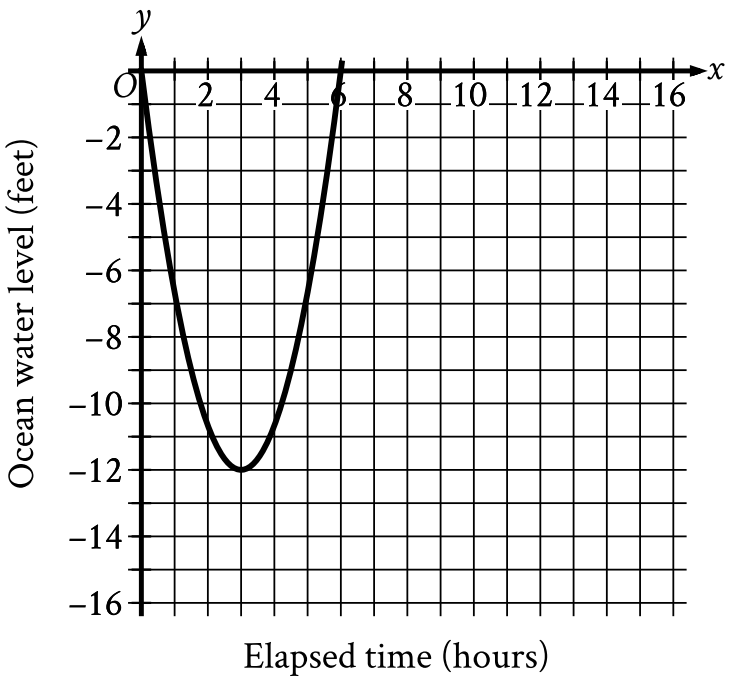
C. $(0, -4)$

D. $(0, 0)$

Question ID 1ee962ec

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 1ee962ec



Scientists recorded data about the ocean water levels at a certain location over a period of 6 hours. The graph shown models the data, where $y = 0$ represents sea level. Which table gives values of x and their corresponding values of y based on the model?

A.

x	y
0	-12
0	3
3	6

B.

x	y
0	0
3	12
0	-6

C.

x	y
0	0
3	-12

6	0

D.

x	y
0	0
12	3
-6	0

Question ID 788bfd56

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 788bfd56

The function f is defined by $f(x) = 4 + \sqrt{x}$. What is the value of $f(144)$?

A. 0

B. 16

C. 40

D. 76

Question ID b39d74a0

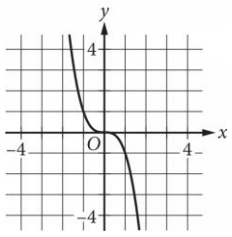
Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: b39d74a0

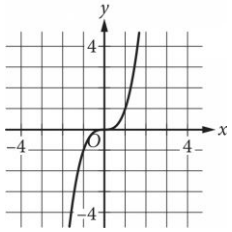
x	y
0	0
1	1
2	8
3	27

The table shown includes some values of x and their corresponding values of y. Which of the following graphs in the xy-plane could represent the relationship between x and y ?

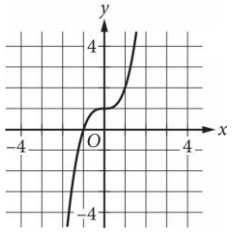
A.



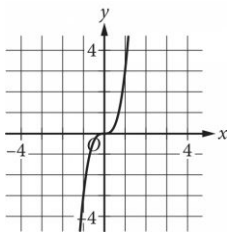
B.



C.



D.


y
4
x
−4
4
O
−4

Question ID 5377d9cf

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 5377d9cf

If $f(x)=\frac{x^2-6x+3}{x-1}$,

what is $f(-1)$?

A. –5

B. –2

C. 2

D. 5

Question ID 75915e3c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 75915e3c

$f(x) = 2(3^x)$

For the function f defined above, what is the value of $f(2)$?

A. 9

B. 12

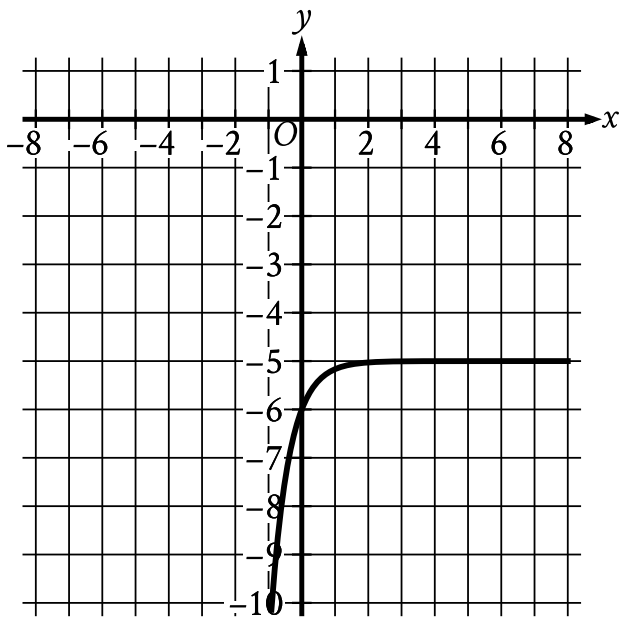
C. 18

D. 36

Question ID 7160cbb3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 7160cbb3



What is the *y*-intercept of the graph shown?

A. $(0, -6)$

B. $(-6, 0)$

C. $(0, 0)$

D. $(-5, -5)$

Question ID 72ae8a87

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 72ae8a87

The function $f(x) = 200{,}000(1.21)^x$ gives a company's predicted annual revenue, in dollars, x years after the company started selling light bulbs online, where $0 < x \leq 10$. What is the best interpretation of the statement "$f(5)$ is approximately equal to $518{,}748$" in this context?

A. 5 years after the company started selling light bulbs online, its predicted annual revenue is approximately $518{,}748$ dollars.

B. 5 years after the company started selling light bulbs online, its predicted annual revenue will have increased by a total of approximately $518{,}748$ dollars.

C. When the company's predicted annual revenue is approximately $518{,}748$ dollars, it is 5 times the predicted annual revenue for the previous year.

D. When the company's predicted annual revenue is approximately $518{,}748$ dollars, it is 5% greater than the predicted annual revenue for the previous year.

Question ID 09f58996

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

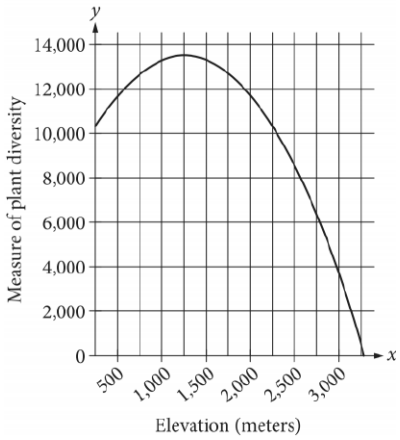
ID: 09f58996

The function f is defined by $f(x) = 6 + \sqrt{x}$. What is the value of $f(36)$?

Question ID ebe4bde0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: ebe4bde0



The quadratic function graphed above models a particular measure of plant diversity as a function of the elevation in a region of Switzerland. According to the model, which of the following is closest to the elevation, in meters, at which plant diversity is greatest?

A. 13,500

B. 3,000

C. 1,250

D. 250

Question ID d46da42c

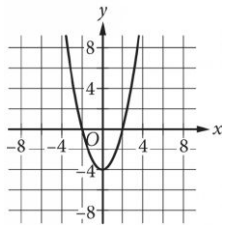
Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: d46da42c

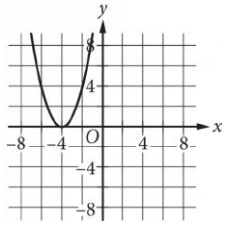
$f(x) = x^2 + 4$

The function f is defined as shown. Which of the following graphs in the xy-plane could be the graph of $y = f(x)$?

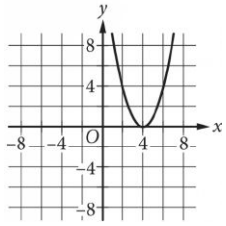
A.



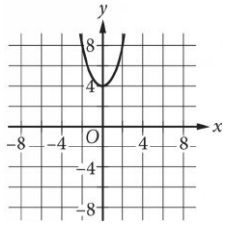
B.



C.



D.



Question ID 79ba511a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 79ba511a

The function f is defined by $f(x) = x^3 + 15$. What is the value of $f(2)$?

A. 20

B. 21

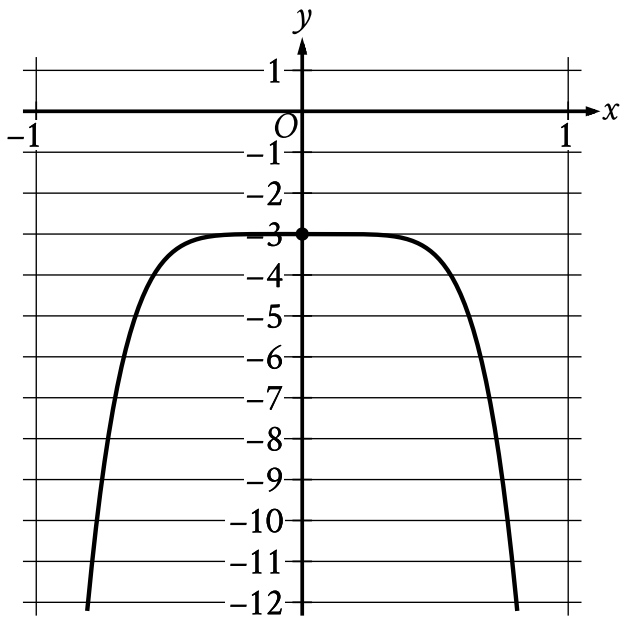
C. 23

D. 24

Question ID 50418728

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: 50418728



The graph of the polynomial function f, where $y = f(x)$, is shown. The y-intercept of the graph is $(0, y)$. What is the value of y?

Question ID ee05c84e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear functions	■□□

ID: ee05c84e

$f(x) = (x + 0.25x)(50 - x)$

The function f is defined above. What is the value of $f(20)$?

A. 250

B. 500

C. 750

D. 2,000