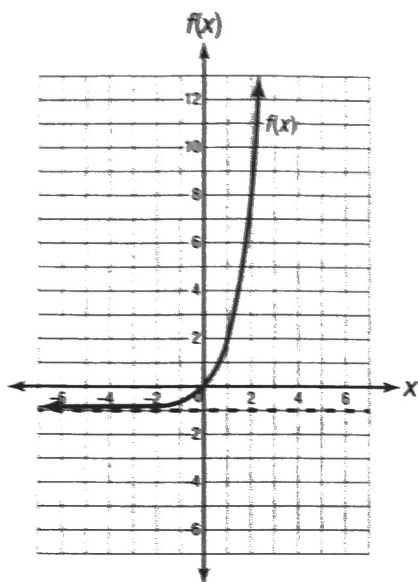


10. The graph of the function  $f(x) = 3^x - 1$  is displayed below.



Which best describes the value of  $f(x)$  as the independent variable  $x$  increases?

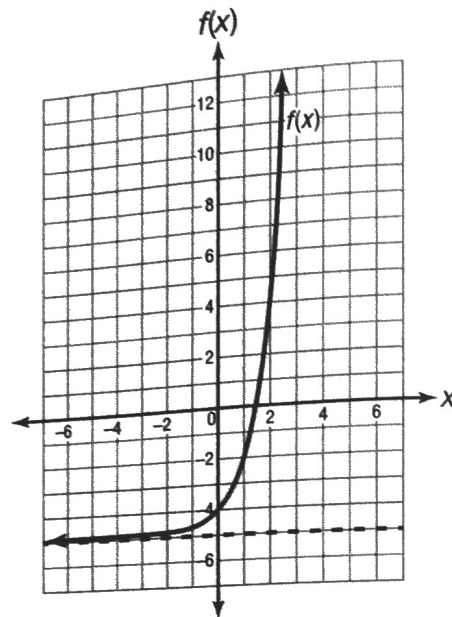
- A. decreasing when  $x < 0$  and increasing when  $x > 0$   
 B. constantly increasing  
 C. constantly decreasing  
 D. neither increasing nor decreasing
11. Several input- and output- values of the function  $f(x) = 2^x + 7$  on the interval  $[0, 5]$  are recorded in the table below.

$x$	0	1	2	3	4	5
$f(x)$	8	9	11	15	23	39

During which subinterval is the rate of change of  $f(x)$  closest to the average rate of change of  $f(x)$  on the interval  $[0, 5]$ ?

- A.  $[0, 2]$   
 B.  $[1, 3]$   
 C.  $[2, 4]$   
 D.  $[3, 5]$

12. Exponential functions  $f(x) = a^x + c$  and  $g(x) = b^x + d$  are represented, respectively, by the following graph and table of input- and output- values.



$x$	-2	-1	0	1	2	3
$g(x)$	$2\frac{1}{4}$	$2\frac{1}{2}$	3	4	6	10

Which describes the relationships of parameters  $a$ ,  $b$ ,  $c$ , and  $d$ ?

- A.  $a < b; c < d$   
 B.  $a < b; c > d$   
 C.  $a > b; c < d$   
 D.  $a > b; c > d$
13. Given the function  $f(x) = 3^x - 2$ , which of the following is equivalent to  $f(3)$ ?

- A. 7  
 B. 9  
 C. 25  
 D. 27