1 D

2 C

3 B

4 A

5 A

6 C

7 The inverse of this function is $f^{-1}(x) = \frac{-10}{x-3} - 1$.

8 C

9 A

10 C

11 A

12 B

13 A

1 Given the function $f(x) = \dfrac{-4(x-2)}{x+1}$

What are the asymptotes of the inverse f^{-1}?

A) $x = -1$, $y = 2$

B) $x = -4$, $y = 2$

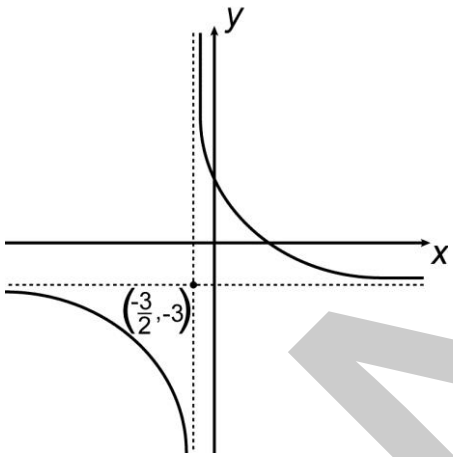
C) $x = -1$, $y = -4$

D) $x = -4$, $y = -1$

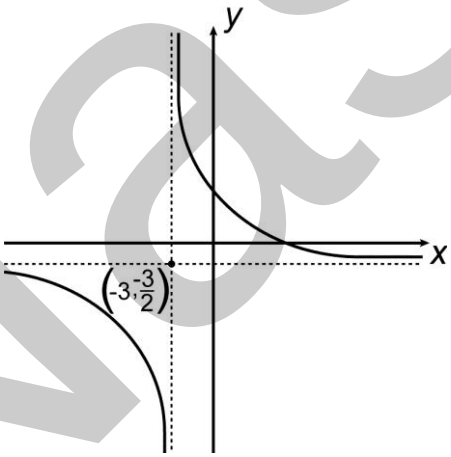
2 A function is represented by the rule $f(x) = \dfrac{-6x + 1}{2x + 3}$.

Which of the following graphs represents $f^{-1}(x)$?

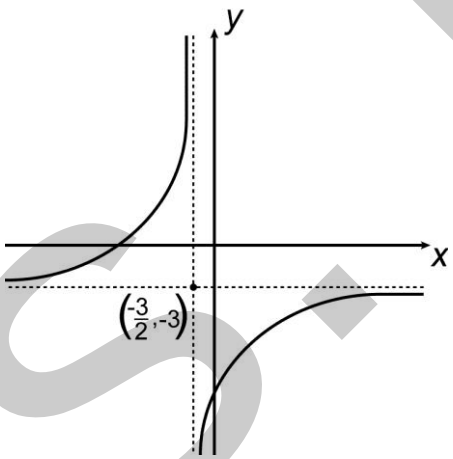
A)



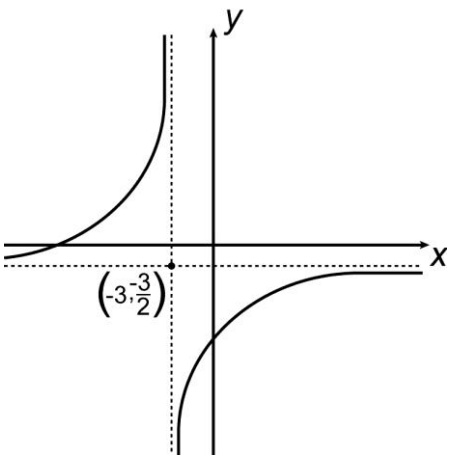
C)



B)



D)



3 Given $f(x) = 2(5^{x+1})$, then which of the following represents $f^{-1}(x)$?

A) $f^{-1}(x) = \log_5\left(\frac{x}{2} - 1\right)$

C) $f^{-1}(x) = \log_{10}\left(\frac{x}{2} - 1\right)$

B) $f^{-1}(x) = \log_5\left(\frac{x}{2}\right) - 1$

D) $f^{-1}(x) = \log_{10}(x - 1)$

4 Which of the following is the inverse of: $f(x) = 3\sqrt{x} + 8,\ x \geq 0$?

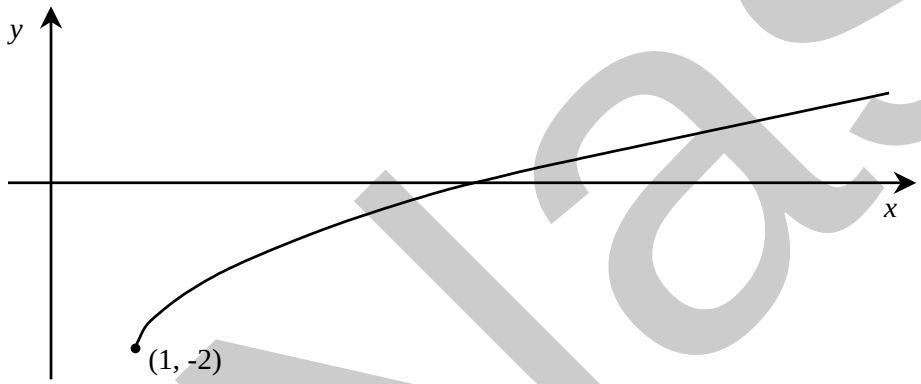
A) $f^{-1}(x) = \left(\frac{x-8}{3}\right)^2,\ x \geq 8$

C) $f^{-1}(x) = \frac{x^2}{3} - 8,\ x \geq 8$

B) $f^{-1}(x) = \frac{(x-8)^2}{3},\ x \geq 8$

D) $f^{-1}(x) = \frac{x^2}{9} - 8,\ x \geq 8$

5 The rule of function f represented by the following graph is $f(x) = \sqrt{x-1} - 2$.



What is the rule of its inverse f^{-1}?

A) $f^{-1}(x) = x^2 + 4x + 5$ where $x \geq -2$

B) $f^{-1}(x) = x^2 + 4x + 5$ where $x \geq 1$

C) $f^{-1}(x) = x^2 - 4x + 5$ where $x \geq -2$

D) $f^{-1}(x) = x^2 - 4x + 5$ where $x \geq 1$

6 Among the following functions, which is the one whose inverse is not a function?

A) $f(x) = \frac{(4x + 3)}{(2x + 5)}$

C) $h(x) = 4|x - 3| + 1$

B) $g(x) = 3\sqrt{4 - x} + 2$

D) $i(x) = -3 \log (2x + 4) - 5$

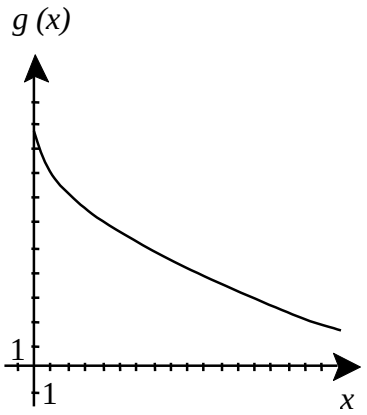
7 Given the function $f(x) = \frac{-10}{x+1} + 3$.

What is the rule of correspondence of the inverse of this function?

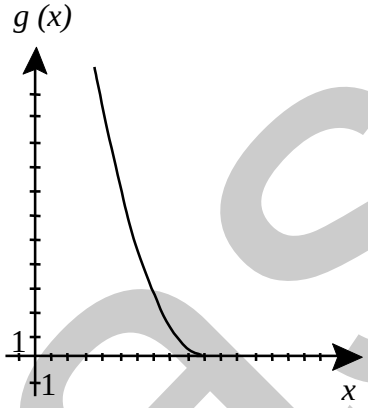
8 The function $f(x) = -2\sqrt{x} + 10$ represents the function of the outside temperature, in degrees Celsius, in relation to the number of hours elapsed, x, since the beginning of observations.

Which of the following graphs represents $g(x)$, the inverse of the function $f(x)$?

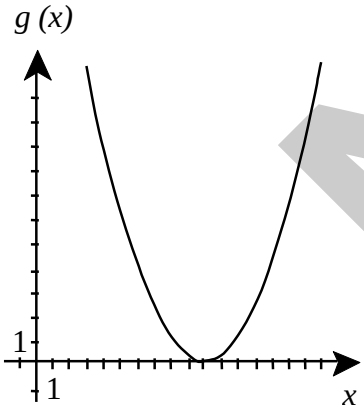
A)



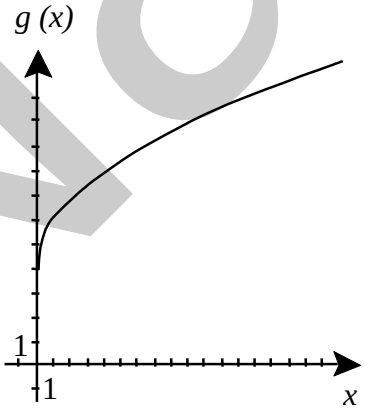
C)



B)



D)



9 The function g is defined by the following rule:

$$g(x) = \frac{x+2}{4x+20}$$

What is the rule of its inverse g^{-1}?

A) $g^{-1}(x) = \frac{-20x+2}{4x-1}$

C) $g^{-1}(x) = \frac{20x-2}{-4x}$

B)

D)

$g^{-1}(x) = \dfrac{4x + 20}{x + 2}$ $g^{-1}(x) = \dfrac{-18}{4x}$

10 Which of the following functions has an inverse that is itself a function?

A) Cosine function
B) Step function
C) Square root function
D) Absolute value function

11 Given the following function.

$$f(x) = \left(\frac{1}{2}\right)^{x-2} + 3$$

What is the equation of its inverse?

A) $f^{-1}(x) = \log_{\frac{1}{2}}(x - 3) + 2$
B) $f^{-1}(x) = \log_{\frac{1}{2}}(x - 2) + 3$
C) $f^{-1}(x) = \log_{\frac{1}{2}}(x + 3) - 2$
D) $f^{-1}(x) = \log_2(x - 3) + 2$

12 Find the inverse of the following function:

$$f(x) = \log_2 x$$

A) $f^{-1}(x) = x^2$
B) $f^{-1}(x) = 2^x$
C) $f^{-1}(x) = y^2$
D) $f^{-1}(x) = 2^y$

13 A biologist expresses the growth of a bacterial culture with the formula

$y = 2^t$ where y = the number of bacteria
t = time in seconds

A mathematician wants to express the same relation so as to calculate the time needed to produce a certain number of bacteria.

What expression will he use?

A) $t = \log_2 y$
B) $t = \log_y 2$
C) $y = \log_t 2$
D) $y = \log_2 t$