

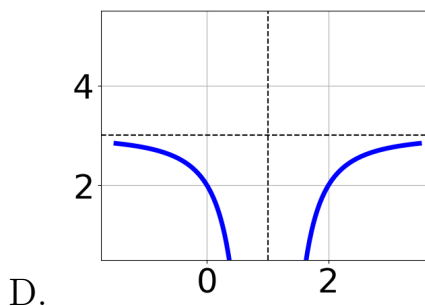
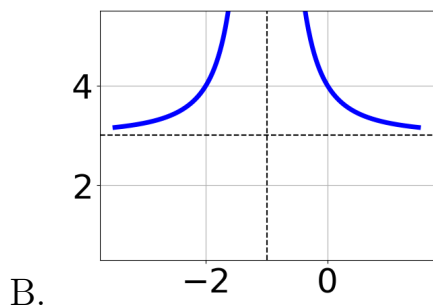
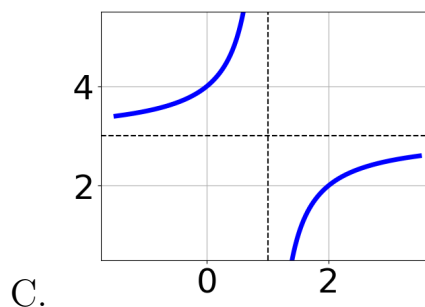
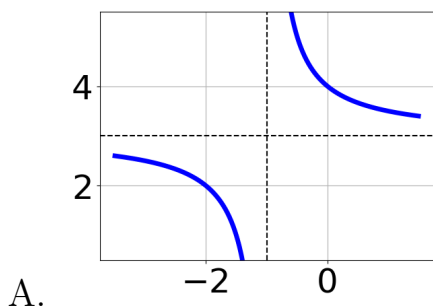
1. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{9}{2x+8} + -7 = \frac{2}{-14x-56}$$

- A.  $x_1 \in [-3.36, -3.31]$  and  $x_2 \in [4.66, 6.66]$
- B.  $x \in [-3.34, -2.34]$
- C.  $x \in [4.61, 4.69]$
- D.  $x_1 \in [-3.54, -3.39]$  and  $x_2 \in [-4.34, -1.34]$
- E. All solutions lead to invalid or complex values in the equation.

2. Choose the graph of the equation below.

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



- E. None of the above.

3. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-54}{63x - 36} + 1 = \frac{-54}{63x - 36}$$

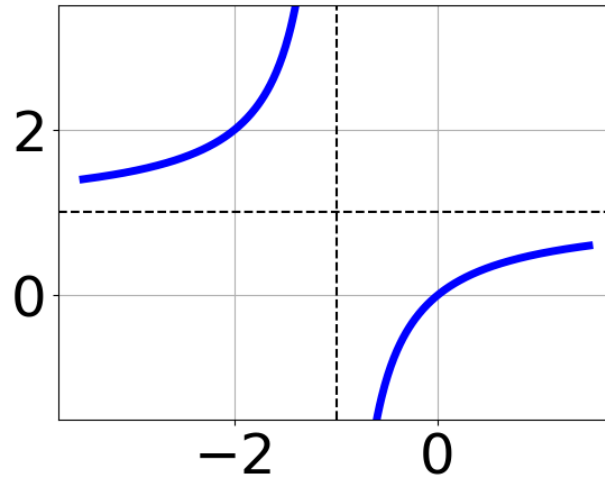
- A.  $x_1 \in [-0.2, 2]$  and  $x_2 \in [0.57, 1.57]$
- B. All solutions lead to invalid or complex values in the equation.
- C.  $x \in [-0.43, 1.57]$
- D.  $x \in [-1.7, 0.3]$
- E.  $x_1 \in [-1.7, 0.3]$  and  $x_2 \in [0.57, 1.57]$

4. Determine the domain of the function below.

$$f(x) = \frac{5}{20x^2 + 5x - 25}$$

- A. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-1.25, 0.75]$  and  $b \in [-1, 3]$
- B. All Real numbers.
- C. All Real numbers except  $x = a$ , where  $a \in [-1.25, 0.75]$
- D. All Real numbers except  $x = a$ , where  $a \in [-23, -17]$
- E. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-23, -17]$  and  $b \in [22, 29]$

5. Choose the equation of the function graphed below.



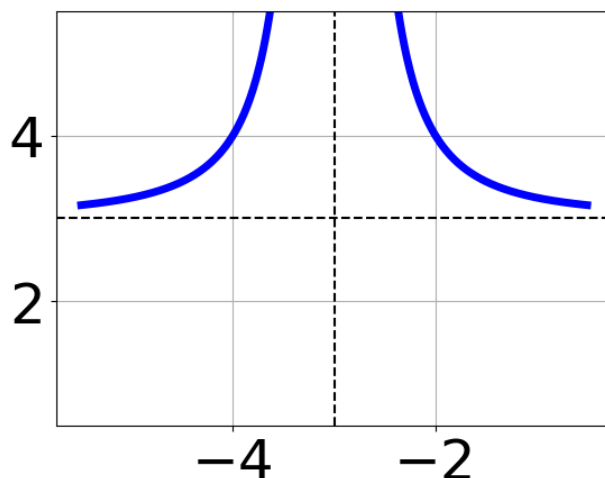
- A.  $f(x) = \frac{1}{x-1} + 1$
- B.  $f(x) = \frac{1}{(x-1)^2} + 1$
- C.  $f(x) = \frac{-1}{x+1} + 1$
- D.  $f(x) = \frac{-1}{(x+1)^2} + 1$
- E. None of the above

6. Determine the domain of the function below.

$$f(x) = \frac{5}{24x^2 + 38x + 15}$$

- A. All Real numbers except  $x = a$ , where  $a \in [-30.08, -29.77]$
- B. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-1.17, -0.82]$  and  $b \in [-0.76, -0.48]$
- C. All Real numbers except  $x = a$ , where  $a \in [-1.17, -0.82]$
- D. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-30.08, -29.77]$  and  $b \in [-12.01, -11.79]$
- E. All Real numbers.

7. Choose the equation of the function graphed below.



- A.  $f(x) = \frac{1}{x-3} - 1$
- B.  $f(x) = \frac{1}{(x-3)^2} - 1$
- C.  $f(x) = \frac{-1}{x+3} - 1$
- D.  $f(x) = \frac{-1}{(x+3)^2} - 1$
- E. None of the above

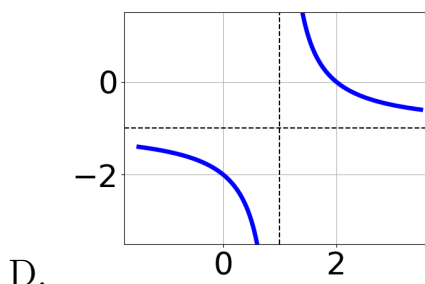
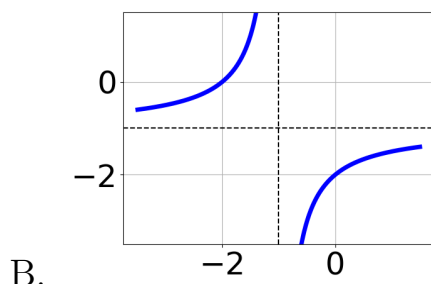
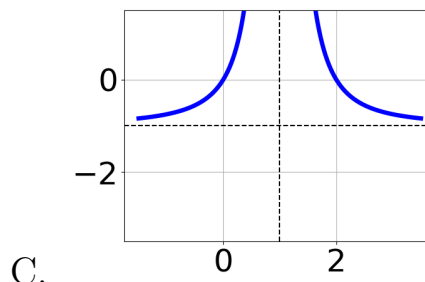
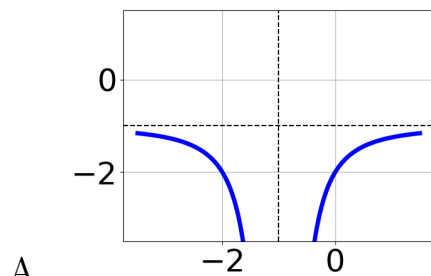
8. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-5x}{7x-5} + \frac{-4x^2}{35x^2-11x-10} = \frac{2}{5x+2}$$

- A.  $x_1 \in [0.01, 0.8]$  and  $x_2 \in [-0.92, 0.86]$
- B.  $x_1 \in [0.01, 0.8]$  and  $x_2 \in [-2.7, 0.17]$
- C.  $x \in [-1.92, -0.76]$
- D. All solutions lead to invalid or complex values in the equation.
- E.  $x \in [-0.95, 0.08]$

9. Choose the graph of the equation below.

$$f(x) = \frac{-1}{x+1} - 1$$



E. None of the above.

10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7x}{-2x-3} + \frac{-2x^2}{-8x^2-6x+9} = \frac{-3}{4x-3}$$

A.  $x_1 \in [-0.48, -0.11]$  and  $x_2 \in [1.3, 2.3]$

B.  $x \in [0.23, 1.2]$

C. All solutions lead to invalid or complex values in the equation.

D.  $x \in [1.09, 1.92]$

E.  $x_1 \in [-0.48, -0.11]$  and  $x_2 \in [-2.5, 0.5]$