

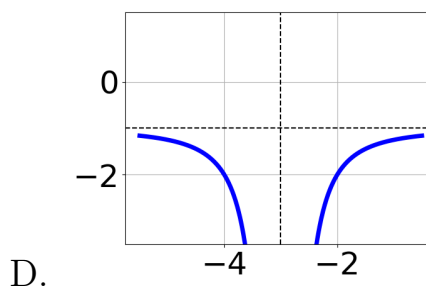
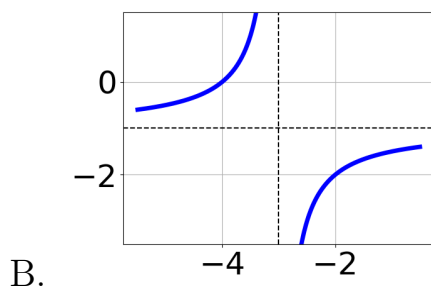
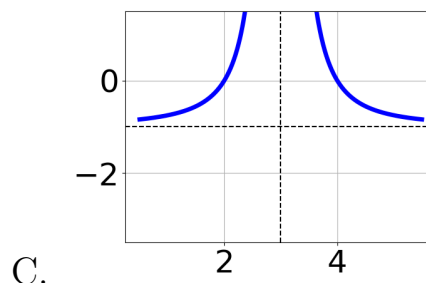
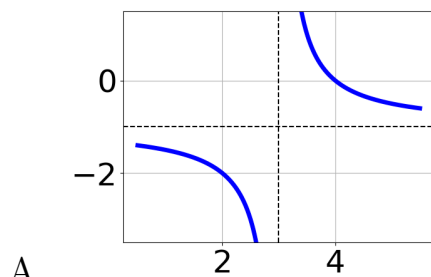
1. Determine the domain of the function below.

$$f(x) = \frac{4}{18x^2 - 45x + 25}$$

- A. All Real numbers except  $x = a$ , where  $a \in [14.3, 15.5]$
  - B. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [0.2, 1.5]$  and  $b \in [1.6, 2.1]$
  - C. All Real numbers.
  - D. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [14.3, 15.5]$  and  $b \in [29.2, 32.1]$
  - E. All Real numbers except  $x = a$ , where  $a \in [0.2, 1.5]$
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2. Choose the graph of the equation below.

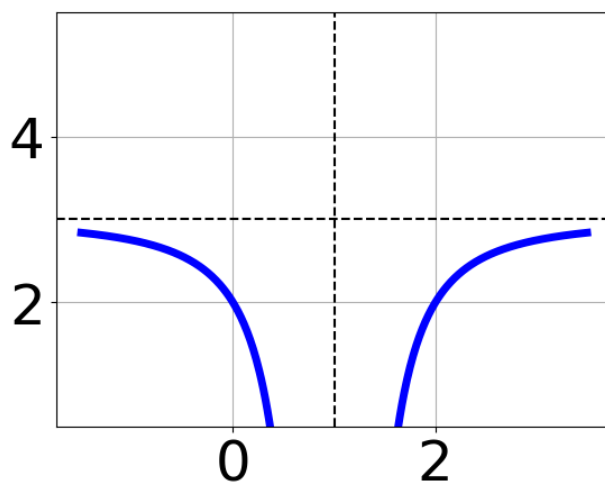
$$f(x) = \frac{-1}{(x-3)^2} + 1$$



E. None of the above.

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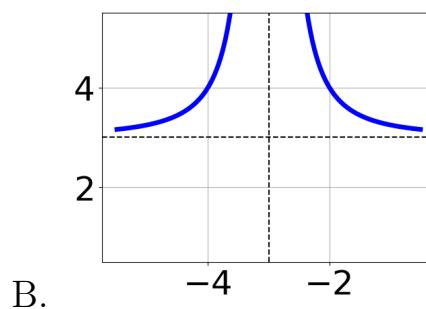
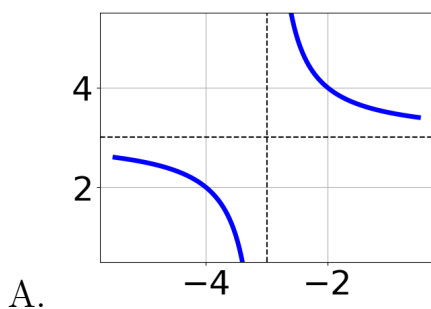
3. Choose the equation of the function graphed below.

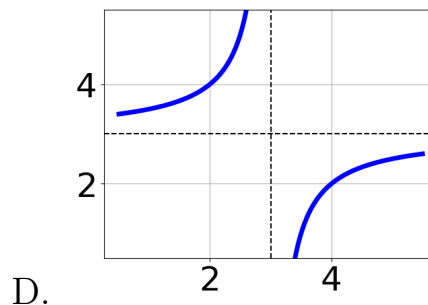
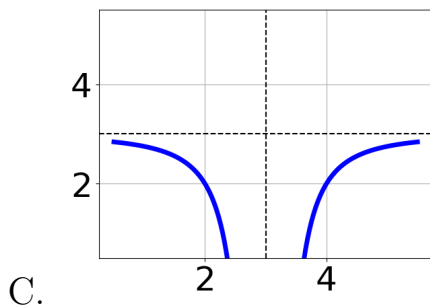


- A.  $f(x) = \frac{1}{(x+1)^2} + 3$
- B.  $f(x) = \frac{-1}{x-1} + 3$
- C.  $f(x) = \frac{-1}{(x-1)^2} + 3$
- D.  $f(x) = \frac{1}{x+1} + 3$
- E. None of the above

4. Choose the graph of the equation below.

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





E. None of the above.

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

$$\frac{78}{-52x - 78} + 1 = \frac{78}{-52x - 78}$$

- A. All solutions lead to invalid or complex values in the equation.  
 B.  $x \in [-1.5, -0.5]$   
 C.  $x_1 \in [-1.5, -0.5]$  and  $x_2 \in [-2.5, 0.5]$   
 D.  $x \in [0.5, 3.5]$   
 E.  $x_1 \in [-1.5, -0.5]$  and  $x_2 \in [1.5, 4.5]$

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

$$\frac{7x}{-2x - 2} + \frac{-6x^2}{6x^2 - 8x - 14} = \frac{2}{-3x + 7}$$

- A.  $x_1 \in [-0.22, 0.42]$  and  $x_2 \in [0.04, 4.04]$   
 B.  $x \in [1.73, 2.25]$   
 C.  $x_1 \in [-0.22, 0.42]$  and  $x_2 \in [-3, 1]$   
 D.  $x \in [2.31, 2.61]$   
 E. All solutions lead to invalid or complex values in the equation.

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7. Determine the domain of the function below.

$$f(x) = \frac{6}{9x^2 + 9x - 18}$$

- A. All Real numbers except  $x = a$ , where  $a \in [-20, -17]$
  - B. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-3, -1]$  and  $b \in [1, 2]$
  - C. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-20, -17]$  and  $b \in [6, 11]$
  - D. All Real numbers except  $x = a$ , where  $a \in [-3, -1]$
  - E. All Real numbers.
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8. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{90}{-50x - 40} + 1 = \frac{90}{-50x - 40}$$

- A.  $x_1 \in [-1.4, 0.5]$  and  $x_2 \in [0, 1.1]$
  - B. All solutions lead to invalid or complex values in the equation.
  - C.  $x \in [0.1, 1.4]$
  - D.  $x_1 \in [-1.4, 0.5]$  and  $x_2 \in [-0.9, -0.1]$
  - E.  $x \in [-1.8, 0.2]$
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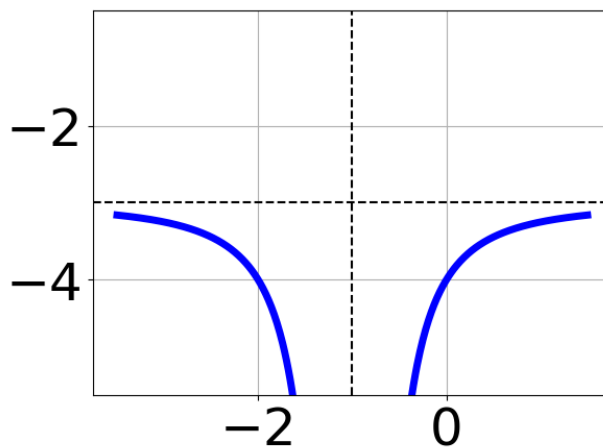
9. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6x}{6x + 6} + \frac{-2x^2}{-18x^2 + 24x + 42} = \frac{6}{-3x + 7}$$

- A. All solutions lead to invalid or complex values in the equation.
- B.  $x \in [1.71, 2.96]$

- C.  $x \in [4.08, 6.5]$
- D.  $x_1 \in [-1.61, 0.2]$  and  $x_2 \in [5.3, 11.3]$
- E.  $x_1 \in [-1.61, 0.2]$  and  $x_2 \in [-3, 5]$
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10. Choose the equation of the function graphed below.



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