

1. Determine the domain of the function below.

$$f(x) = \frac{5}{18x^2 - 39x + 20}$$

- A. All Real numbers except $x = a$, where $a \in [11.91, 12.04]$
 - B. All Real numbers except $x = a$, where $a \in [0.74, 0.97]$
 - C. All Real numbers.
 - D. All Real numbers except $x = a$ and $x = b$, where $a \in [0.74, 0.97]$ and $b \in [1.28, 1.61]$
 - E. All Real numbers except $x = a$ and $x = b$, where $a \in [11.91, 12.04]$ and $b \in [29.82, 30.39]$
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2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-80}{-40x - 60} + 1 = \frac{-80}{-40x - 60}$$

- 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. $x_1 \in [-1.5, 0.5]$ and $x_2 \in [0.5, 2.5]$
 - E. $x \in [0.5, 3.5]$
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3. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{2x + 0}{6x + 3} + \frac{-4x^2 + 0x + 0}{-18x^2 - 33x - 12} = \frac{-2}{-3x - 4}$$

- A. $x_1 \in [-0.99, 0.35]$ and $x_2 \in [0.5, 1.1]$
- B. $x_1 \in [-0.99, 0.35]$ and $x_2 \in [-2, 0.8]$
- C. $x \in [-0.53, 1.82]$

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

E. $x \in [-1.43, -0.7]$

4. Determine the domain of the function below.

$$f(x) = \frac{6}{15x^2 - 3x - 12}$$

A. All Real numbers.

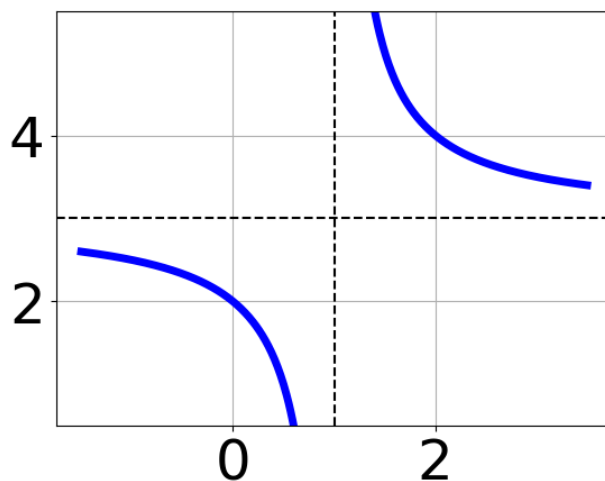
B. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.1, 0.2]$ and $b \in [0.2, 2.2]$

C. All Real numbers except $x = a$, where $a \in [-21.1, -19.6]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-21.1, -19.6]$ and $b \in [8.7, 9.5]$

E. All Real numbers except $x = a$, where $a \in [-2.1, 0.2]$

5. Choose the equation of the function graphed below.



A. $f(x) = \frac{1}{x+1} + 7$

B. $f(x) = \frac{1}{(x+1)^2} + 7$

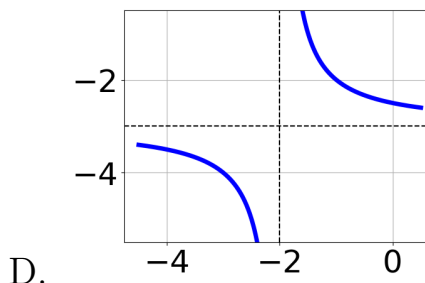
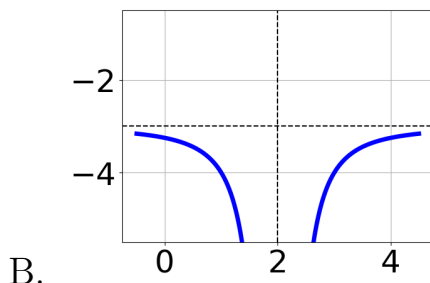
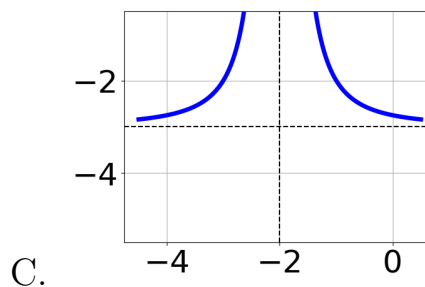
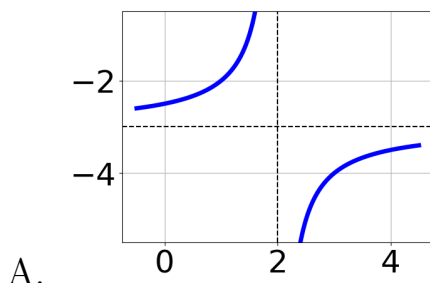
C. $f(x) = \frac{-1}{x-1} + 7$

D. $f(x) = \frac{-1}{(x-1)^2} + 7$

E. None of the above

6. Choose the graph of the equation below.

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



E. None of the above.

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

$$\frac{-117}{117x + 78} + 1 = \frac{-117}{117x + 78}$$

A. $x_1 \in [-1.1, 0.2]$ and $x_2 \in [0.3, 1]$

B. $x_1 \in [-1.1, 0.2]$ and $x_2 \in [-2.3, -0.3]$

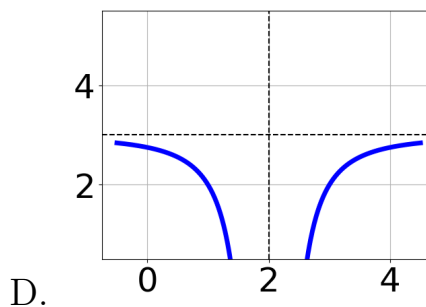
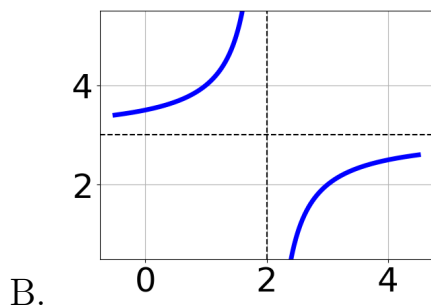
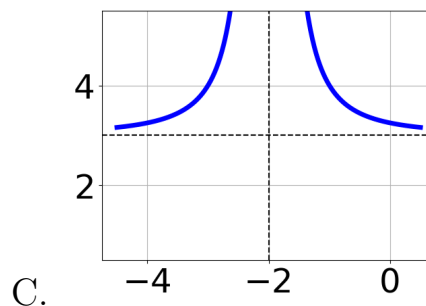
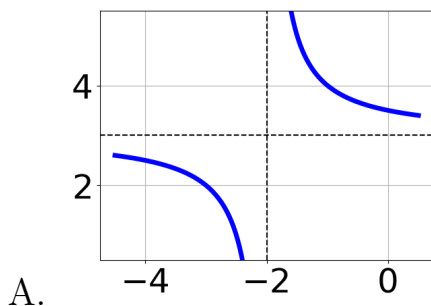
C. $x \in [-0.67, 1.33]$

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

E. $x \in [-0.6, 1.5]$

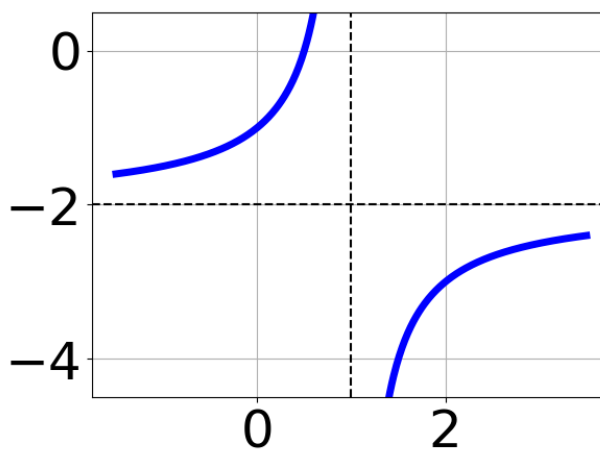
8. Choose the graph of the equation below.

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



E. None of the above.

9. Choose the equation of the function graphed below.



A. $f(x) = \frac{1}{x+1} - 2$

- B. $f(x) = \frac{1}{(x+1)^2} - 2$
- C. $f(x) = \frac{-1}{x-1} - 2$
- D. $f(x) = \frac{-1}{(x-1)^2} - 2$
- E. None of the above
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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{6x+0}{-5x-5} + \frac{-2x^2+0x+0}{-10x^2+25x+35} = \frac{2}{2x-7}$$

- A. All solutions lead to invalid or complex values in the equation.
- B. $x_1 \in [0.14, 0.96]$ and $x_2 \in [-2.4, 0.9]$
- C. $x \in [2.86, 3.56]$
- D. $x \in [2.1, 3.45]$
- E. $x_1 \in [0.14, 0.96]$ and $x_2 \in [1.5, 3.2]$
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