1. Determine the domain of the function below.

$$f(x) = \frac{3}{36x^2 - 16}$$

A. All Real numbers except $x = a$, where $a \in [-1.67, 0.33]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.67, 0.33]$ and $b \in [-0.33, 1.67]$

C. All Real numbers except $x = a$, where $a \in [-25, -20]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-25, -20]$ and $b \in [22, 26]$

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2. Determine the domain of the function below.

$$f(x) = \frac{3}{18x^2 - 18}$$

A. All Real numbers except $x = a$, where $a \in [-2.7, 0.3]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.7, 0.3]$ and $b \in [0.6, 2.2]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-36.3, -35.8]$ and $b \in [7.2, 9.3]$

D. All Real numbers except $x = a$, where $a \in [-36.3, -35.8]$

E. All Real numbers.

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

$$\frac{3x}{-7x + 4} + \frac{-5x^2}{-14x^2 + 36x - 16} = \frac{4}{2x - 4}$$

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

B. $x \in [1.1, 2.8]$

C. $x_1 \in [-0.4, 1.7]$ and $x_2 \in [-21.94, -15.94]$

D. $x \in [-18.8, -16.4]$

E. $x_1 \in [-0.4, 1.7]$ and $x_2 \in [-8.43, 7.57]$

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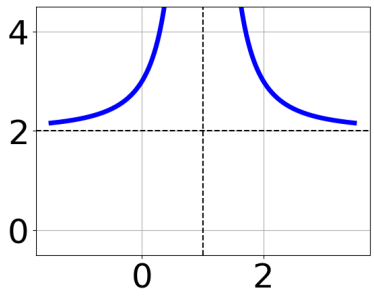
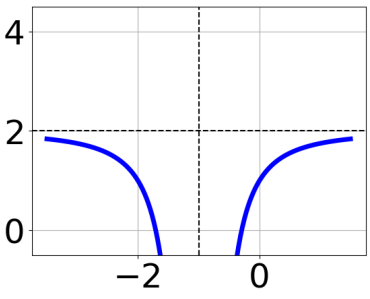
4. Choose the graph of the equation below.

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

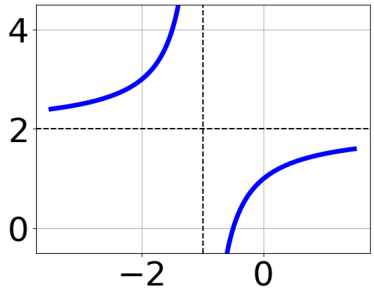
A.



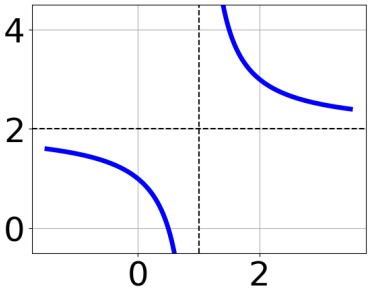
C.



B.



D.



E. None of the above.

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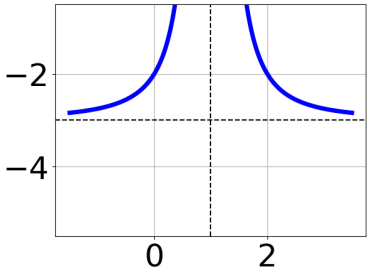
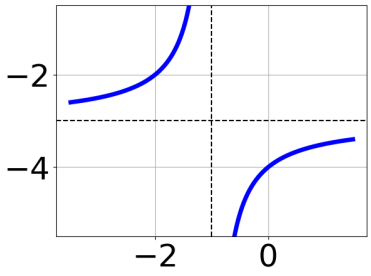
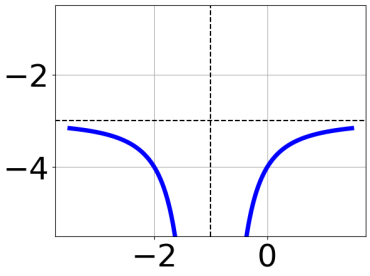
5. Choose the graph of the equation below.

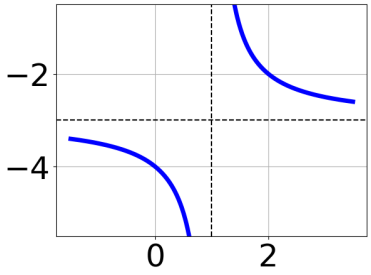
$$f(x) = \frac{-1}{x+1} - 3$$

A.



B. 

D. 

C. 

E. None of the above.

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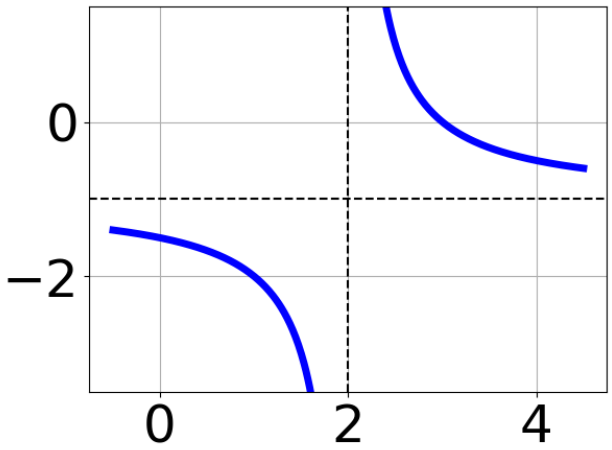
6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x-2} - 3$

B. $f(x) = \dfrac{1}{(x+2)^2} - 3$

C. $f(x) = \dfrac{-1}{(x-2)^2} - 3$

D. $f(x) = \dfrac{1}{x+2} - 3$

E. None of the above

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

$$\frac{-8}{8x-9}+3=\frac{-3}{-56x+63}$$

A. $x \in [1.48, 3.48]$

B. $x \in [-0.91, -0.75]$

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

D. $x_1 \in [1.23, 1.44]$ and $x_2 \in [0.48, 3.48]$

E. $x_1 \in [-0.91, -0.75]$ and $x_2 \in [0.48, 3.48]$

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

$$\frac{25}{10x-25}+1=\frac{25}{10x-25}$$

A. $x \in [-3.5, -1.5]$

B. $x_1 \in [2.5, 4.5]$ and $x_2 \in [2.5, 4.5]$

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

D. $x \in [2.5, 3.5]$

E. $x_1 \in [-3.5, -1.5]$ and $x_2 \in [2.5, 4.5]$

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

$$\frac{-6x}{4x-7}+\frac{-3x^2}{-20x^2+55x-35}=\frac{-4}{-5x+5}$$

A. $x \in [1.16, 1.72]$

B. $x_1 \in [-1.22, -0.45]$ and $x_2 \in [0.67, 1.33]$

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

D. $x \in [0.69, 1.02]$

E. $x_1 \in [-1.22, -0.45]$ and $x_2 \in [1.37, 2.08]$

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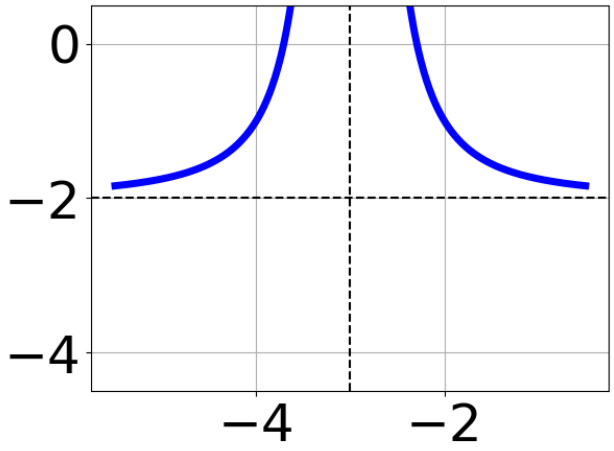
10. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{x+3} - 2$

B. $f(x) = \dfrac{-1}{x-3} - 2$

C. $f(x) = \dfrac{1}{(x+3)^2} - 2$

D. $f(x) = \dfrac{-1}{(x-3)^2} - 2$

E. None of the above
