1. Determine the domain of the function below.

$$f(x) = \frac{6}{15x^2 + 15x - 30}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-19, -15]$ and $b \in [24, 27]$

B. All Real numbers except $x = a$, where $a \in [-4, 0]$

C. All Real numbers except $x = a$, where $a \in [-19, -15]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-4, 0]$ and $b \in [1, 4]$

E. All Real numbers.

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2. Determine the domain of the function below.

$$f(x) = \frac{6}{20x^2 + 31x + 12}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-20.02, -19.99]$ and b $[-12.01, -11.97]$

B. All Real numbers except $x = a$, where $a \in [-20.02, -19.99]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.81, -0.77]$ and $b \in [-0.79, -0.7]$

D. All Real numbers except $x = a$, where $a \in [-0.81, -0.77]$

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.

$$\frac{-7x}{2x - 3} + \frac{-2x^2}{8x^2 + 2x - 21} = \frac{5}{4x + 7}$$

A. $x \in [-2.68, -1.86]$

B. $x_1 \in [-0.08, 0.28]$ and $x_2 \in [-4.5, 1.2]$

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

D. $x_1 \in [-0.08, 0.28]$ and $x_2 \in [1.3, 4]$

E. $x \in [-1.96, -1.47]$

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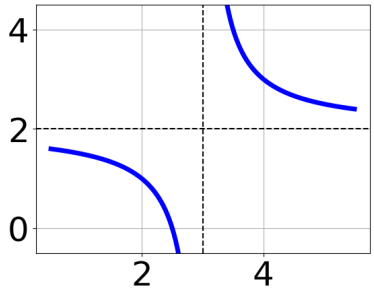
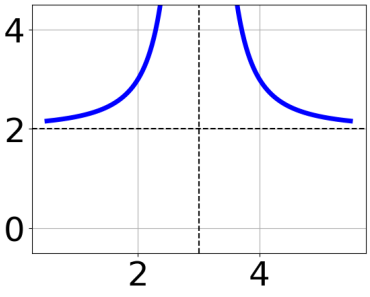
4. Choose the graph of the equation below.

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

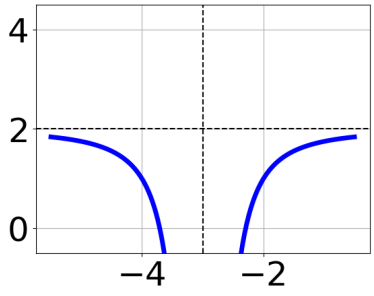
A.



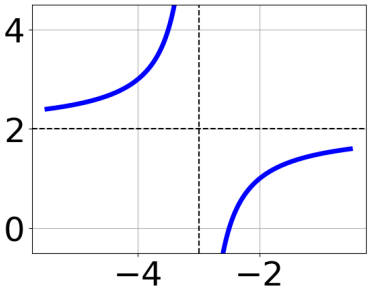
C.



B.



D.



E. None of the above.

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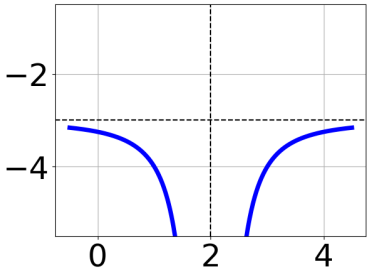
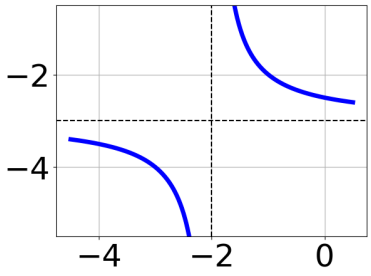
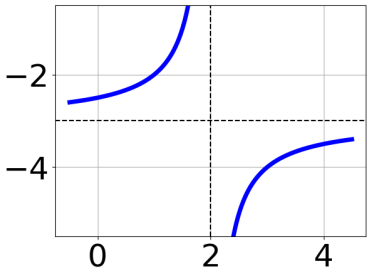
5. Choose the graph of the equation below.

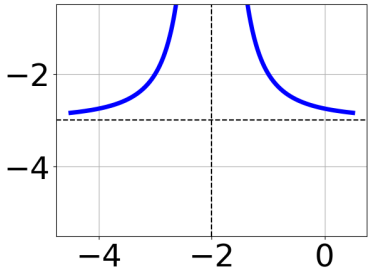
$$f(x) = \frac{-1}{x-2} + 3$$

A.



B. 

D. 

C. 

E. None of the above.

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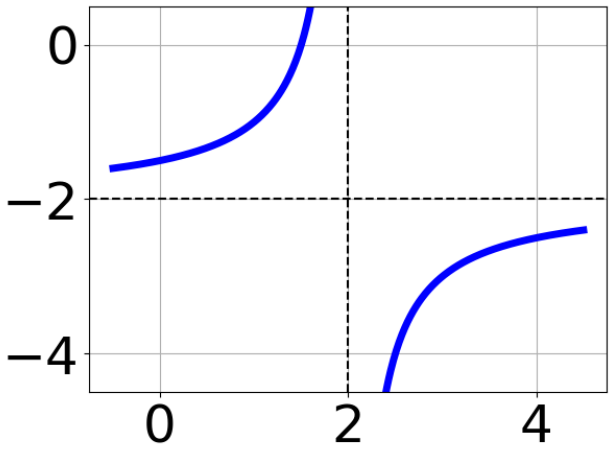
6. Choose the equation of the function graphed below.



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

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

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

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

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.

$$\frac{6}{8x+2} + -2 = \frac{-8}{-72x-18}$$

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

B. $x_1 \in [-0.28, 0.41]$ and $x_2 \in [0.45, 0.6]$

C. $x \in [0.39, 1.43]$

D. $x_1 \in [-0.28, 0.41]$ and $x_2 \in [0.61, 0.73]$

E. $x \in [0.07, 2.07]$

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

$$\frac{-26}{91x+78} + 1 = \frac{-26}{91x+78}$$

A. $x \in [-0.14, 1.86]$

B. $x \in [-1.86, 0.14]$

C. $x_1 \in [-3.86, 0.14]$ and $x_2 \in [-0.4, 1]$

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

E. $x_1 \in [-3.86, 0.14]$ and $x_2 \in [-1.8, 0.1]$

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

$$\frac{-4x}{3x+5} + \frac{-6x^2}{-9x^2-33x-30} = \frac{2}{-3x-6}$$

A. $x_1 \in [-0.23, 0.72]$ and $x_2 \in [-2.67, 0.33]$

B. $x \in [-5.8, -2.34]$

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

D. $x_1 \in [-0.23, 0.72]$ and $x_2 \in [-5.48, -2.48]$

E. $x \in [-2.32, -1.28]$

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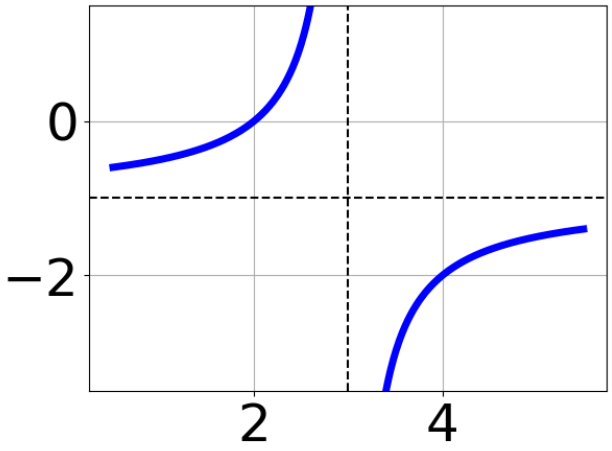
10. Choose the equation of the function graphed below.



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
