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

$$\frac{5x}{7x+5} + \frac{-4x^2}{-14x^2-59x-35} = \frac{5}{-2x-7}$$

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

B. $x_1 \in [-6.71, -4.31]$ and $x_2 \in [-0.57, -0.28]$

C. $x \in [-3.61, -3.27]$

D. $x_1 \in [-6.71, -4.31]$ and $x_2 \in [-1, -0.57]$

E. $x \in [-1.16, 0.71]$

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2. Determine the domain of the function below.

$$f(x) = \frac{3}{24x^2 - 56x + 30}$$

A. All Real numbers except $x = a$, where $a \in [23.7, 25.5]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.8, 0.9]$ and $b \in [0.9, 3]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [23.7, 25.5]$ and $b \in [29, 31.9]$

D. All Real numbers except $x = a$, where $a \in [-0.8, 0.9]$

E. All Real numbers.

---

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

$$\frac{-36}{60x+84} + 1 = \frac{-36}{60x+84}$$

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

B. $x_1 \in [-3.4, -0.4]$ and $x_2 \in [0.4, 2.4]$

C. $x \in [-2.4, -0.4]$

D. $x \in [0.4, 2.4]$

E. $x_1 \in [-3.4, -0.4]$ and $x_2 \in [-3.4, 0.6]$

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

$$\frac{42}{-30x + 24} + 1 = \frac{42}{-30x + 24}$$

A. $x \in [-0.2, 1.8]$

B. $x \in [-1.5, -0.5]$

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

D. $x_1 \in [0.5, 1.3]$ and $x_2 \in [-1.2, 2.8]$

E. $x_1 \in [-1.5, -0.5]$ and $x_2 \in [-1.2, 2.8]$

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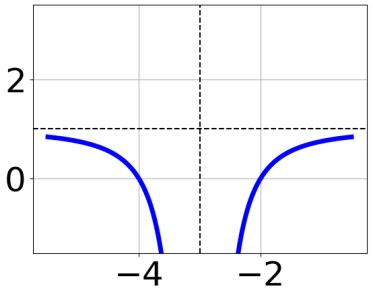
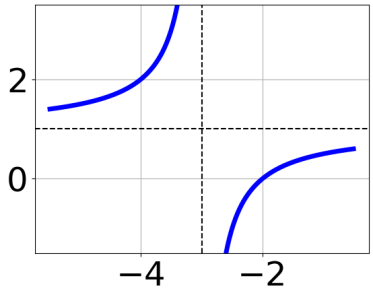
5. Choose the graph of the equation below.

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

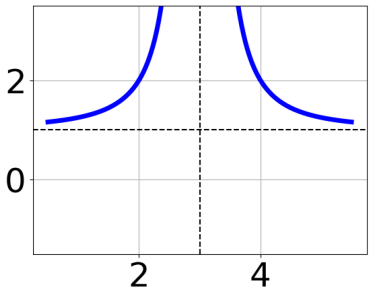
A.



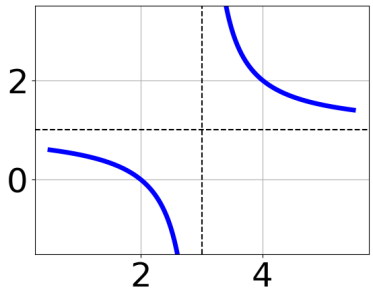
C.



B.



D.



E. None of the above.

6. Determine the domain of the function below.

$$f(x) = \frac{6}{12x^2 + 29x + 15}$$

A. All Real numbers except $x = a$, where $a \in [-16.7, -14.9]$

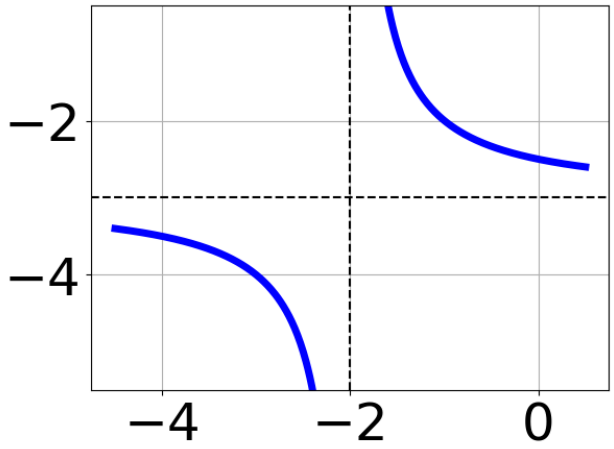
B. All Real numbers except $x = a$ and $x = b$, where $a \in [-16.7, -14.9]$ and $b \in [-12.3, -11.6]$

C. All Real numbers.

D. All Real numbers except $x = a$, where $a \in [-4, -1.5]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-4, -1.5]$ and $b \in [-1.6, 0.1]$

7. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{(x-2)^2} - 7$

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

C. $f(x) = \dfrac{1}{x+2} - 7$

D. $f(x) = \dfrac{-1}{x-2} - 7$

E. None of the above

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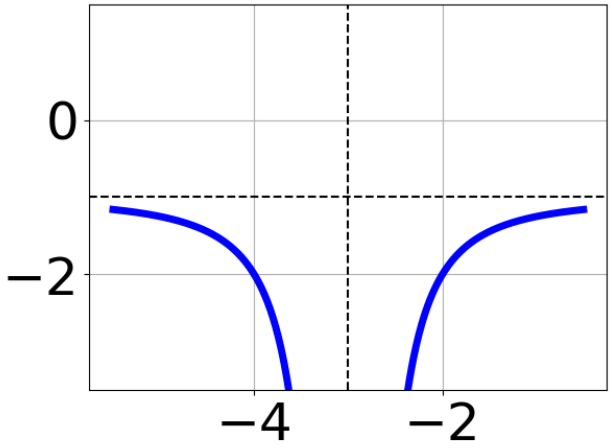
8. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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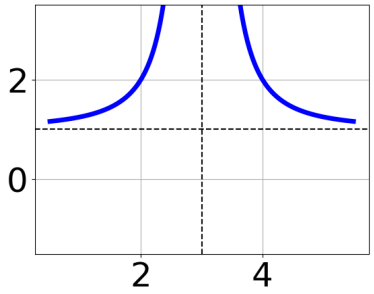
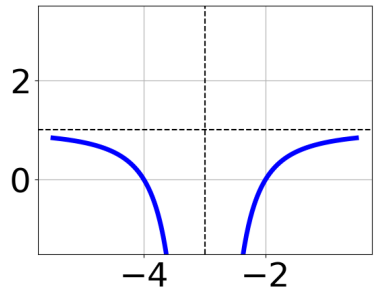
9. Choose the graph of the equation below.

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

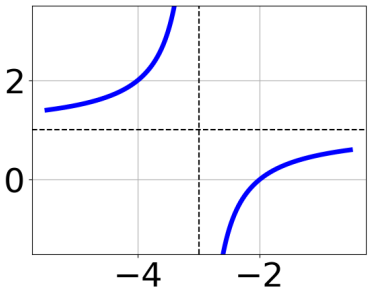
A.



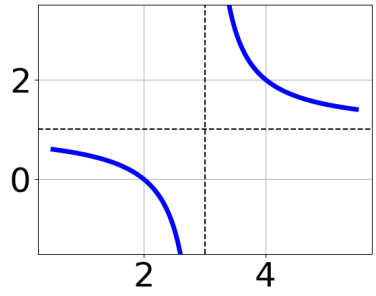
B.



D.



C.



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.

$$\frac{-2x}{-2x+6} + \frac{-3x^2}{-12x^2+22x+42} = \frac{-4}{6x+7}$$

A. $x \in [-2.01, -0.52]$

B. $x_1 \in [0.05, 1.45]$ and $x_2 \in [-3.2, -0.8]$

C. $x \in [-3.39, -1.71]$

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

E. $x_1 \in [0.05, 1.45]$ and $x_2 \in [-1.6, 4.7]$
