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

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

A. $x \in [-3.0, 0.0]$

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

C. $x_1 \in [-2, 0]$ and $x_2 \in [1, 4]$

D. $x_1 \in [-2, 0]$ and $x_2 \in [-1, 0]$

E. $x \in [0, 3]$

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

$$\frac{2x}{6x+3}+\frac{-6x^2}{30x^2+27x+6}=\frac{2}{5x+2}$$

A. $x_1 \in [-1.15, -0.42]$ and $x_2 \in [-0.2, 3.8]$

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

C. $x_1 \in [-1.15, -0.42]$ and $x_2 \in [-0.9, 0.7]$

D. $x \in [-0.53, -0.17]$

E. $x \in [2.2, 2.73]$

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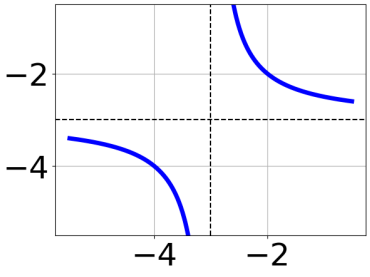
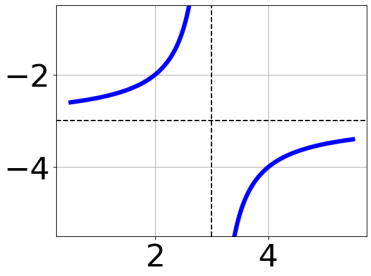
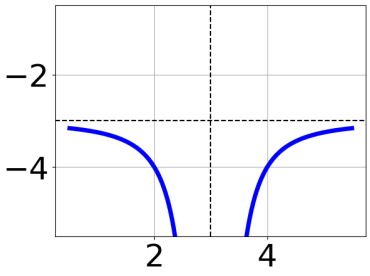
3. Choose the graph of the equation below.

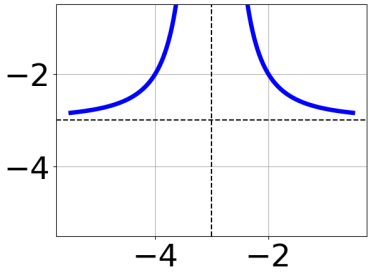
$$f(x)=\frac{-1}{x+3}-3$$

A.



B. 

D. 

C. 

E. None of the above.

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4. Determine the domain of the function below.

$$f(x) = \frac{4}{30x^2 - 6x - 36}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-4, 0]$ and $b \in [0.2, 5.2]$

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

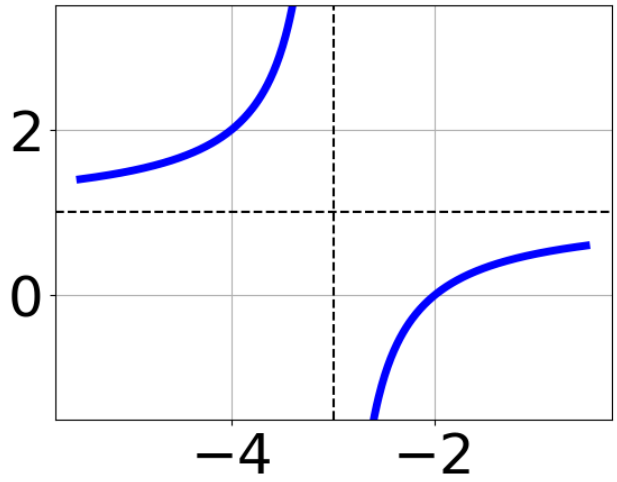
C. All Real numbers except $x = a$ and $x = b$, where $a \in [-38, -35]$ and $b \in [30, 31]$

D. All Real numbers except $x = a$, where $a \in [-38, -35]$

E. All Real numbers.

---

5. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

---

6. Determine the domain of the function below.

$$f(x) = \frac{4}{15x^2 - 15}$$

A. All Real numbers.

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-10.5, -7.3]$ and $b \in [22.6, 25.5]$

C. All Real numbers except $x = a$, where $a \in [-2.3, 0.4]$

D. All Real numbers except $x = a$, where $a \in [-10.5, -7.3]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.3, 0.4]$ and $b \in [-0.4, 2.1]$

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

$$\frac{-5x}{-2x-7} + \frac{-5x^2}{8x^2+32x+14} = \frac{-5}{-4x-2}$$

A. $x_1 \in [-2.3, -1.1]$ and $x_2 \in [-1.47, 3.53]$

B. $x_1 \in [-2.3, -1.1]$ and $x_2 \in [-4.5, 0.5]$

C. $x \in [-0.6, -0.3]$

D. $x \in [1.2, 2]$

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

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

$$\frac{-8}{4x+2} + -9 = \frac{-3}{16x+8}$$

A. $x \in [-0.7, 0.4]$

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

C. $x_1 \in [-1, -0.1]$ and $x_2 \in [-0.4, 1.8]$

D. $x \in [-1.7, 0.3]$

E. $x_1 \in [-1, -0.1]$ and $x_2 \in [-1.8, -0.1]$

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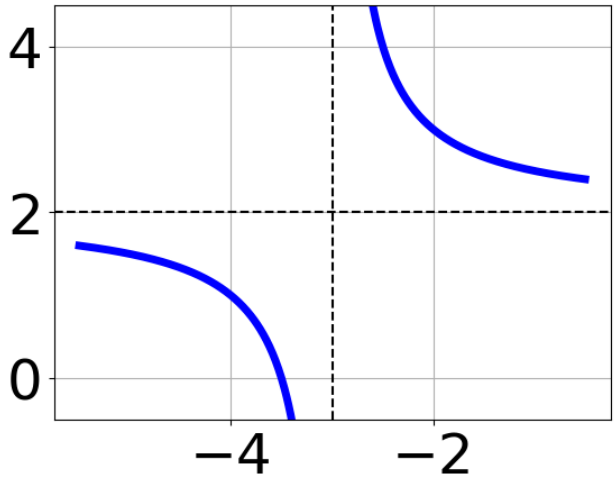
9. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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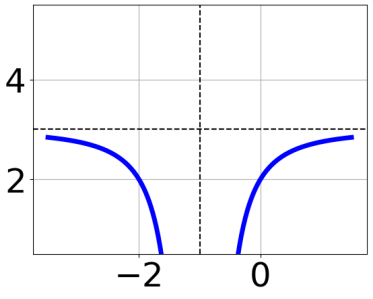
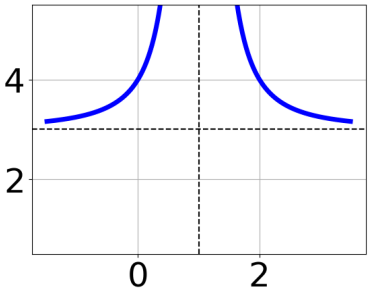
10. Choose the graph of the equation below.

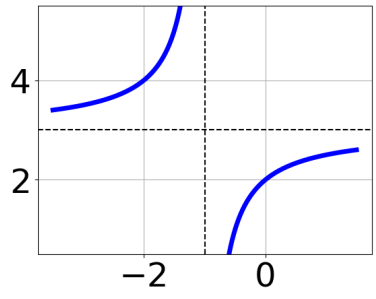
$$f(x) = \frac{1}{x-1} + 3$$

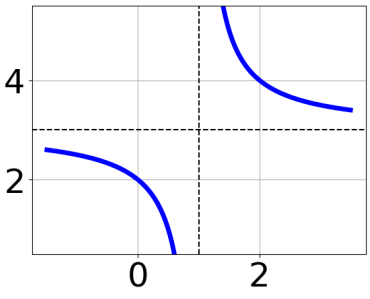
A.



B.



C. 

D. 

E. None of the above.
