1. Determine the domain of the function below.

$$f(x) = \frac{4}{15x^2 - 13x - 20}$$

A. All Real numbers except $x = a$, where $a \in [-20, -19]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-20, -19]$ and $b \in [15, 16]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.8, 1.2]$ and $b \in [-0.33, 4.67]$

D. All Real numbers.

E. All Real numbers except $x = a$, where $a \in [-1.8, 1.2]$

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2. Determine the domain of the function below.

$$f(x) = \frac{6}{12x^2 + 21x + 9}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-12.57, -11.6]$ and $b \in [-9.5, -8.48]$

B. All Real numbers except $x = a$, where $a \in [-12.57, -11.6]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.37, -0.85]$ and $b \in [-0.94, -0.33]$

D. All Real numbers except $x = a$, where $a \in [-1.37, -0.85]$

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.

$$\frac{-3x}{5x - 7} + \frac{-2x^2}{-15x^2 + 6x + 21} = \frac{-6}{-3x - 3}$$

A. $x \in [-7.5, -4.5]$

B. $x_1 \in [0.92, 6.92]$ and $x_2 \in [-7.5, -2.5]$

C. $x \in [-4, 0]$

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

E. $x_1 \in [0.92, 6.92]$ and $x_2 \in [-3.6, 7.4]$

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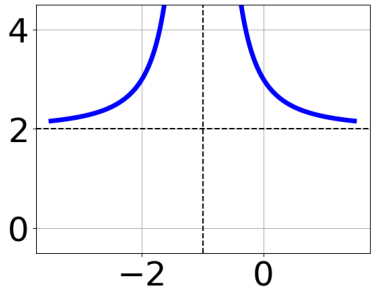
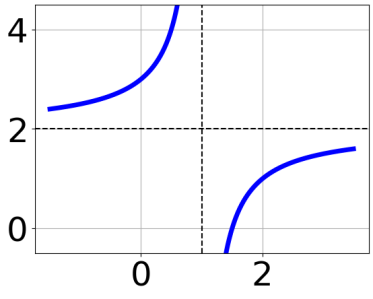
4. Choose the graph of the equation below.

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

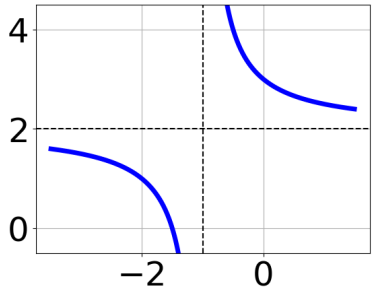
A.



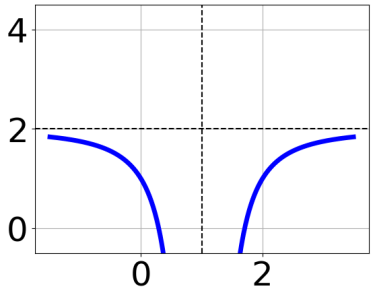
C.



B.



D.



E. None of the above.

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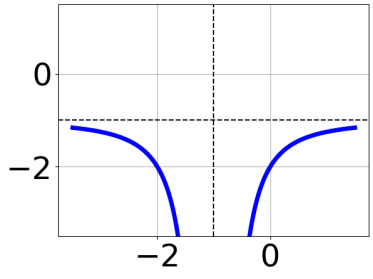
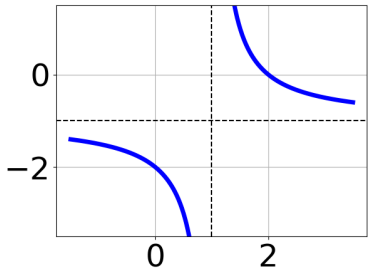
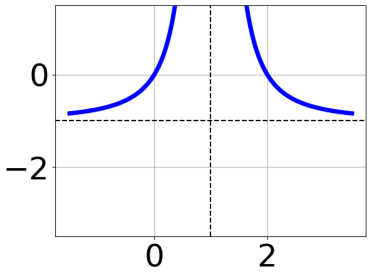
5. Choose the graph of the equation below.

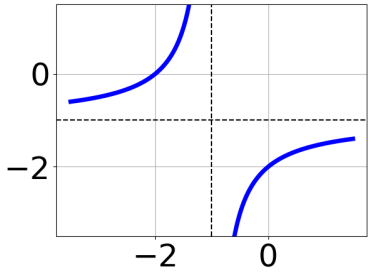
$$f(x) = \frac{1}{(x+1)^2} + 1$$

A.



B. 

D. 

C. 

E. None of the above.

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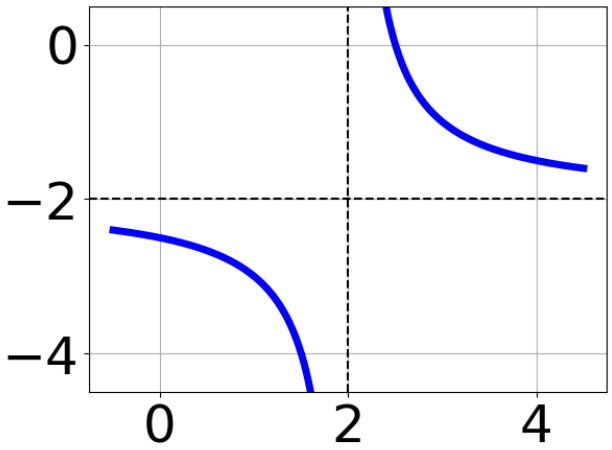
6. Choose the equation of the function graphed below.



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

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

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

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

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.

$$\frac{56}{-48x+24}+1=\frac{56}{-48x+24}$$

A. $x_1 \in [-1.5, -0.2]$ and $x_2 \in [0.5, 3.5]$

B. $x_1 \in [-0.1, 1.7]$ and $x_2 \in [0.5, 3.5]$

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

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

E. $x \in [-1.5, -0.2]$

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

$$\frac{12}{-12x-48}+1=\frac{12}{-12x-48}$$

A. $x \in [-4.0, -3.0]$

B. $x \in [3, 5]$

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

D. $x_1 \in [-4, -2]$ and $x_2 \in [3, 7]$

E. $x_1 \in [-4, -2]$ and $x_2 \in [-4, -3]$

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

$$\frac{-6x}{-6x+7}+\frac{-6x^2}{-24x^2-8x+42}=\frac{-7}{4x+6}$$

A. $x_1 \in [-0.63, 0.68]$ and $x_2 \in [-8.12, 0.88]$

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

C. $x \in [-4.2, -2.6]$

D. $x \in [-2.06, -1.19]$

E. $x_1 \in [-0.63, 0.68]$ and $x_2 \in [-2.83, 8.17]$

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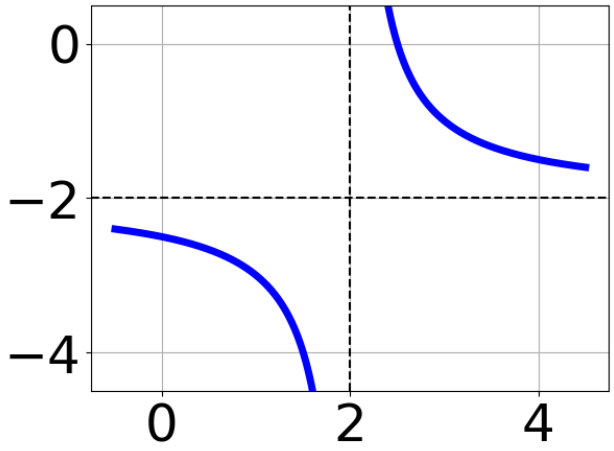
10. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above
