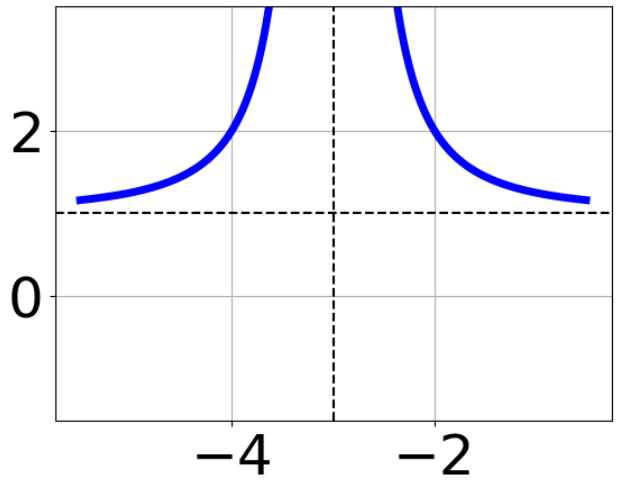
1. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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2. Determine the domain of the function below.

$$f(x) = \frac{3}{15x^2 - 43x + 30}$$

A. All Real numbers.

B. All Real numbers except $x = a$, where $a \in [0.92, 1.5]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [14.93, 15.92]$ and $b \in [29.84, 30.14]$

D. All Real numbers except $x = a$, where $a \in [14.93, 15.92]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [0.92, 1.5]$ and $b \in [1.45, 1.75]$

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

$$\frac{-3x}{7x+4} + \frac{-4x^2}{-35x^2-34x-8} = \frac{6}{-5x-2}$$

A. $x \in [-0.53, -0.24]$

B. $x_1 \in [-0.72, -0.48]$ and $x_2 \in [-6.57, 0.43]$

C. $x_1 \in [-0.72, -0.48]$ and $x_2 \in [2.84, 4.84]$

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

E. $x \in [3.52, 4.22]$

4. Determine the domain of the function below.

$$f(x) = \frac{5}{9x^2-9}$$

A. All Real numbers except $x = a$, where $a \in [-10.8, -8.2]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.6, -0.5]$ and $b \in [-0.2, 1.2]$

C. All Real numbers except $x = a$, where $a \in [-1.6, -0.5]$

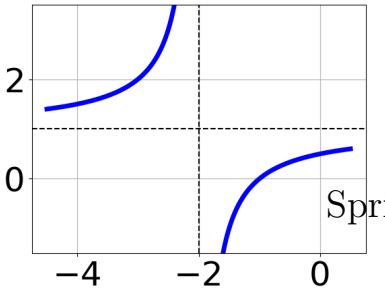
D. All Real numbers.

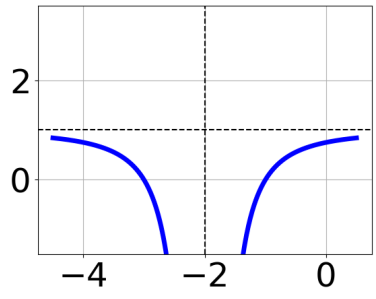
E. All Real numbers except $x = a$ and $x = b$, where $a \in [-10.8, -8.2]$ and $b \in [8.9, 10]$

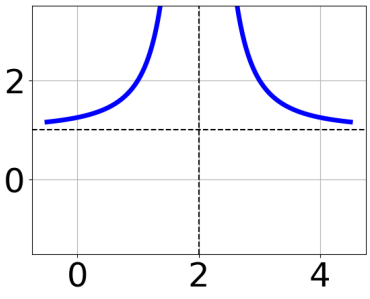
5. Choose the graph of the equation below.

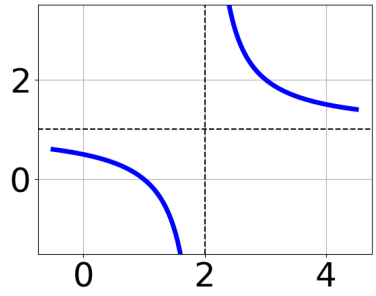
$$f(x) = \frac{1}{x-2} + 1$$

A.



B. 

D. 

C. 

E. None of the above.

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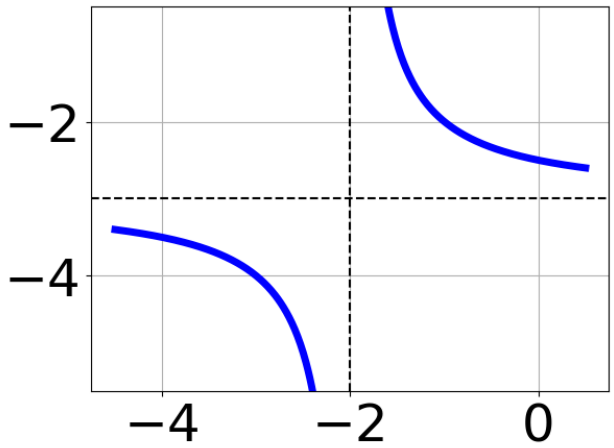
6. Choose the equation of the function graphed below.



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

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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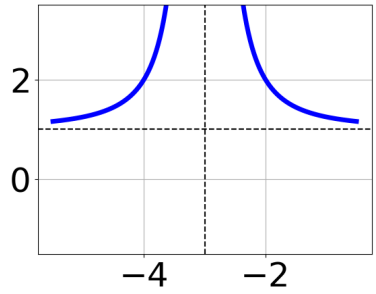
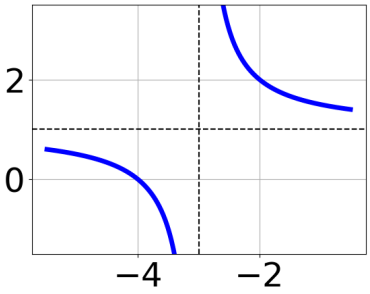
7. Choose the graph of the equation below.

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

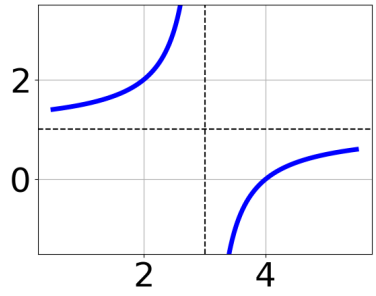
A.



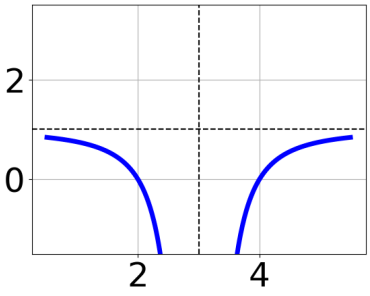
C.



B.



D.



E. None of the above.

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

$$\frac{-5}{-4x+8} + 2 = \frac{9}{-8x+16}$$

A. $x \in [-3.59, -2.59]$

B. $x_1 \in [-0.18, 0.28]$ and $x_2 \in [0.81, 3.81]$

C. $x_1 \in [-3.59, -2.59]$ and $x_2 \in [0.81, 3.81]$

D. $x \in [0.81, 1.81]$

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

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

$$\frac{-7x}{-5x-3} + \frac{-2x^2}{10x^2-14x-12} = \frac{-6}{-2x+4}$$

A. $x \in [1.3, 2.4]$

B. $x \in [4.6, 6]$

C. $x_1 \in [-0.9, 0.7]$ and $x_2 \in [2.13, 6.13]$

D. $x_1 \in [-0.9, 0.7]$ and $x_2 \in [-0.6, 1.4]$

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

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

$$\frac{56}{14x-63} + 1 = \frac{56}{14x-63}$$

A. $x \in [-4.5, -3.5]$

B. $x_1 \in [-4.5, -3.5]$ and $x_2 \in [2.5, 8.5]$

C. $x_1 \in [3.5, 5.5]$ and $x_2 \in [2.5, 8.5]$

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

E. $x \in [4.5, 5.5]$
