1. Determine the domain of the function below.

$$f(x) = \frac{3}{36x^2 + 12x - 15}$$

A. All Real numbers except $x = a$, where $a \in [-30.2, -27.8]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-30.2, -27.8]$ and $b \in [17.9, 19.9]$

D. All Real numbers except $x = a$, where $a \in [-2.8, -0.6]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.8, -0.6]$ and $b \in [-0.5, 1.6]$

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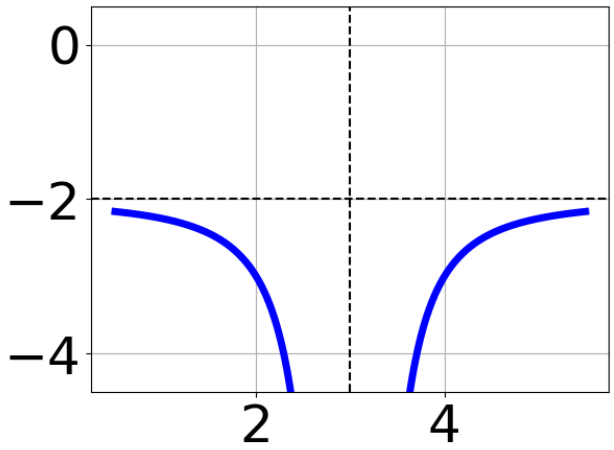
2. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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

$$\frac{6x}{6x+4} + \frac{-4x^2}{42x^2+40x+8} = \frac{7}{7x+2}$$

A. $x_1 \in [-0.99, -0.54]$ and $x_2 \in [1.34, 5.34]$

B. $x \in [0.95, 1.53]$

C. $x_1 \in [-0.99, -0.54]$ and $x_2 \in [-5.67, 0.33]$

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

E. $x \in [-0.3, 0.15]$

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

$$\frac{3}{-4x+8} + 3 = \frac{6}{32x-64}$$

A. $x \in [-2.06, -1.42]$

B. $x_1 \in [-2.06, -1.42]$ and $x_2 \in [0.31, 3.31]$

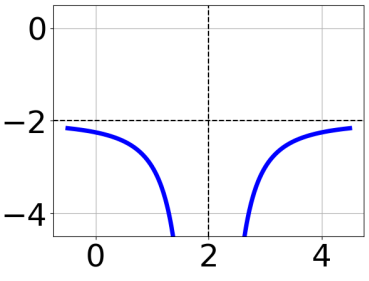
C. $x_1 \in [1.28, 2.15]$ and $x_2 \in [0.31, 3.31]$

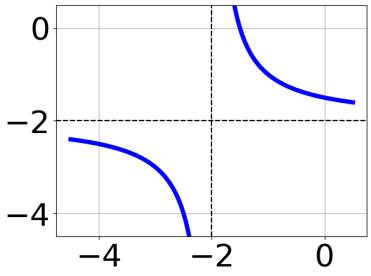
D. All solutions lead to invalid or complex values in the equation.

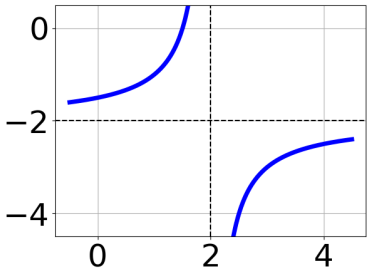
E. $x \in [1.31, 4.31]$

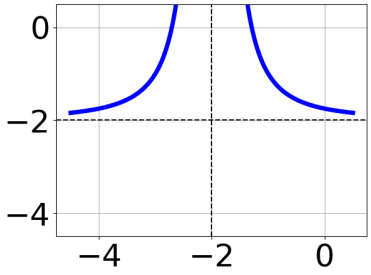
5. Choose the graph of the equation below.

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

A. 

B. 

D. 

C. 

E. None of the above.

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

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

A. $x_1 \in [-1.6, -0.7]$ and $x_2 \in [-1.1, 0.3]$

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

C. $x_1 \in [-1.6, -0.7]$ and $x_2 \in [-0.3, 1.4]$

D. $x \in [-1.0, 1.0]$

E. $x \in [0.4, 1.9]$

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7. Determine the domain of the function below.

$$f(x)=\frac{3}{18x^2-24x-24}$$

A. All Real numbers except $x = a$, where $a \in [-25, -22]$

B. All Real numbers except $x = a$, where $a \in [-0.67, 0.33]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-25, -22]$ and $b \in [18, 19]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.67, 0.33]$ and $b \in [1, 5]$

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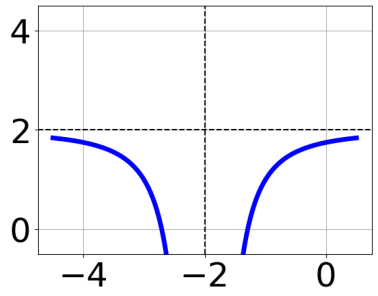
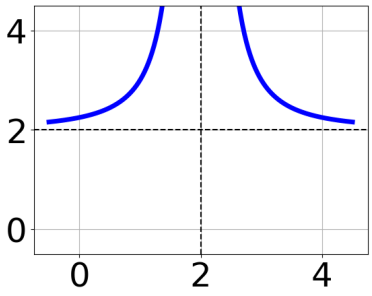
8. Choose the graph of the equation below.

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

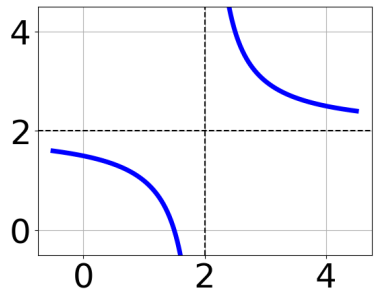
A.



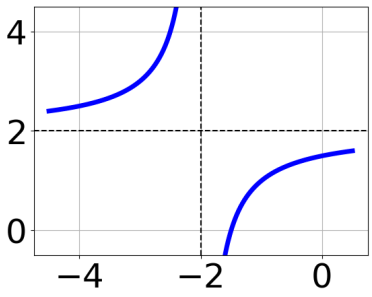
C.



B.



D.



E. None of the above.

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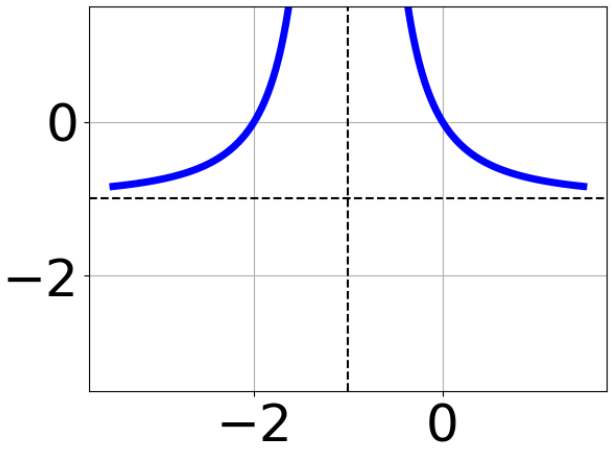
9. Choose the equation of the function graphed below.



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

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

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

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

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.

$$\frac{-6x}{-5x-4} + \frac{-4x^2}{15x^2-23x-28} = \frac{-4}{-3x+7}$$

A. $x_1 \in [-1.22, 1.87]$ and $x_2 \in [-0.8, 0.2]$

B. $x_1 \in [-1.22, 1.87]$ and $x_2 \in [4.67, 6.67]$

C. $x \in [1.37, 4.17]$

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

E. $x \in [3.16, 6.6]$
