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

$$\frac{-3}{-4x-6}+6=\frac{-9}{12x+18}$$

A. $x_1 \in [-2.75, -0.75]$ and $x_2 \in [-2.25, -0.25]$

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

C. $x \in [0.25, 3.25]$

D. $x \in [-1.75, 0.25]$

E. $x_1 \in [-2.75, -0.75]$ and $x_2 \in [0.25, 2.25]$

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2. Determine the domain of the function below.

$$f(x)=\frac{4}{20x^2-35x+15}$$

A. All Real numbers except $x = a,$ where $a \in [11.91, 12.78]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b,$ where $a \in [0.31, 0.96]$ and $b \in [0.94, 1.52]$

D. All Real numbers except $x = a,$ where $a \in [0.31, 0.96]$

E. All Real numbers except $x = a$ and $x = b,$ where $a \in [11.91, 12.78]$ and $b \in [24.72, 25.13]$

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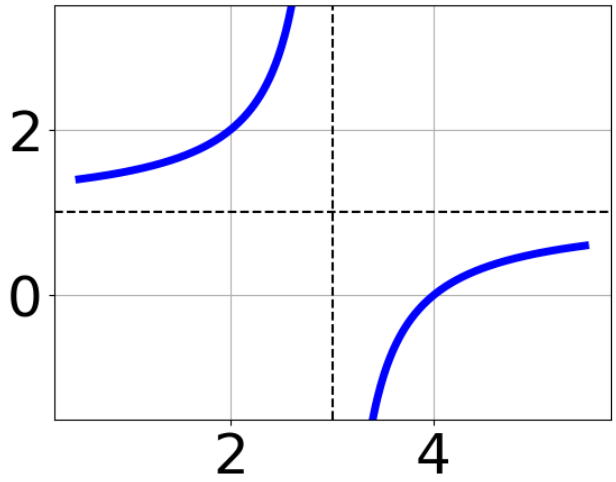
3. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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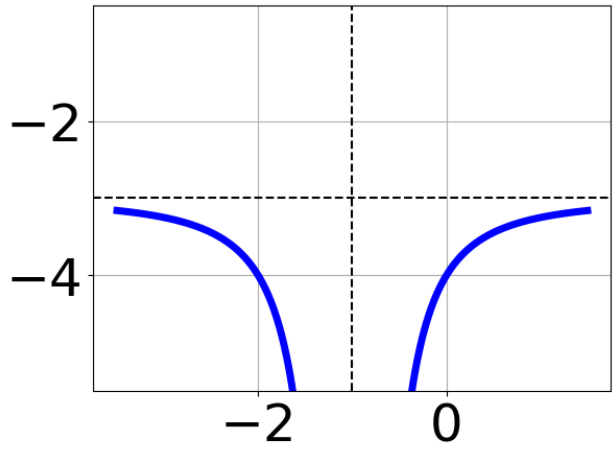
4. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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

$$\frac{7x}{-6x+6} + \frac{-3x^2}{36x^2 - 78x + 42} = \frac{5}{-6x+7}$$

A. $x_1 \in [0.55, 0.62]$ and $x_2 \in [0.69, 1.07]$

B. $x \in [1.16, 1.18]$

C. $x_1 \in [0.55, 0.62]$ and $x_2 \in [1.07, 1.48]$

D. $x \in [1.17, 1.34]$

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

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

$$\frac{-9}{-6x-2} + 6 = \frac{-2}{-54x-18}$$

A. $x_1 \in [-1.4, -0.1]$ and $x_2 \in [-0.9, -0.3]$

B. $x \in [-1.58, 1.42]$

C. $x \in [-0.2, 1.3]$

D. $x_1 \in [-1.4, -0.1]$ and $x_2 \in [-0.5, 0.9]$

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

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7. Determine the domain of the function below.

$$f(x) = \frac{4}{25x^2 + 45x + 20}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-25.34, -24.97]$ and b $[-20.13, -19.86]$

B. All Real numbers except $x = a$, where $a \in [-25.34, -24.97]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.15, -0.85]$ and $b \in [-0.87, -0.58]$

D. All Real numbers except $x = a$, where $a \in [-1.15, -0.85]$

E. All Real numbers.

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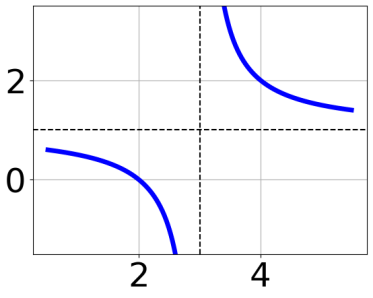
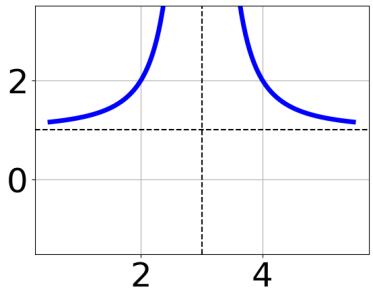
8. Choose the graph of the equation below.

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

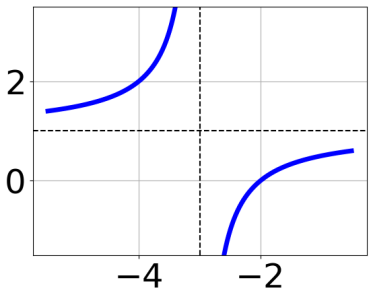
A.



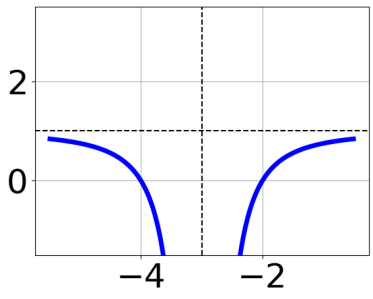
C.



B.



D.



E. None of the above.

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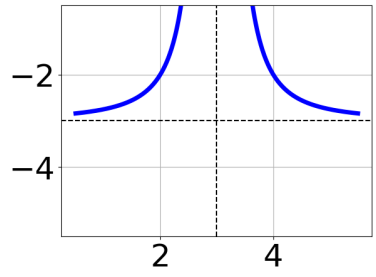
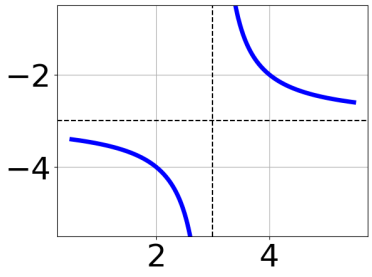
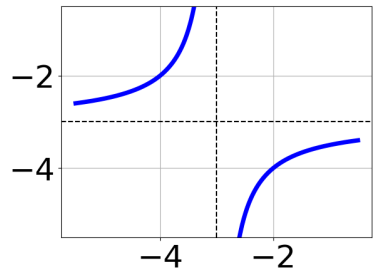
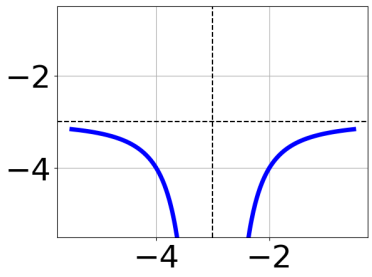
9. Choose the graph of the equation below.

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

A. 

C. 

B. 

D. 

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.

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

A. $x \in [1.22, 1.51]$

B. $x_1 \in [0.25, 0.37]$ and $x_2 \in [1.15, 2.13]$

C. $x_1 \in [0.25, 0.37]$ and $x_2 \in [-1.09, 0.72]$

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

E. $x \in [0.37, 0.71]$
