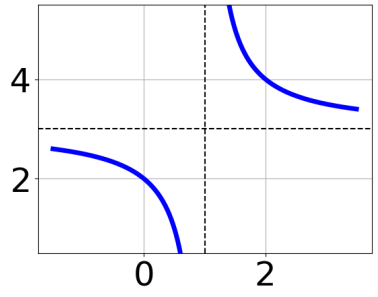
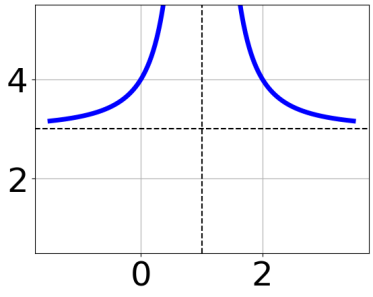
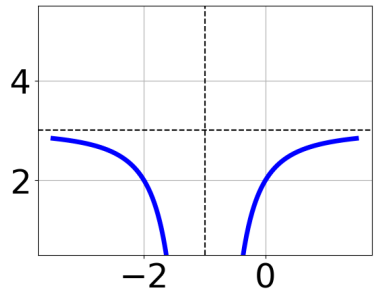
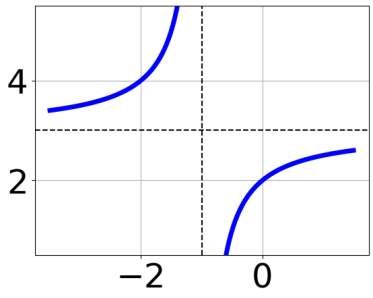
1. Choose the graph of the equation below.

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

A. 

C. 

B. 

D. 

E. None of the above.

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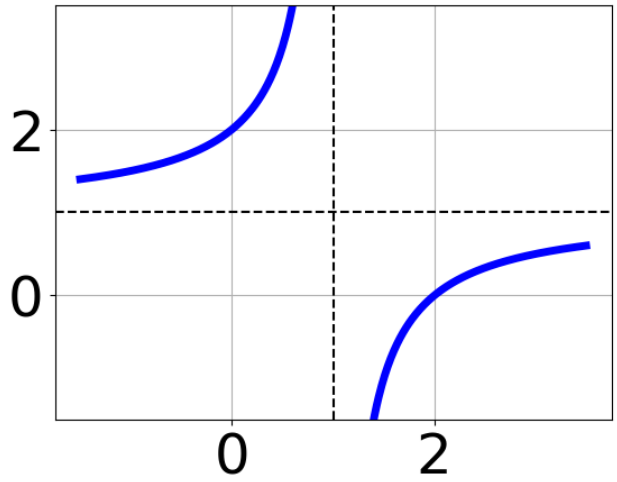
2. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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

$$\frac{9}{-5x+2} + -6 = \frac{3}{15x-6}$$

A. $x_1 \in [-1.1, -0.7]$ and $x_2 \in [0, 0.14]$

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

C. $x \in [-1.1, -0.7]$

D. $x_1 \in [-0.2, 0.4]$ and $x_2 \in [0.14, 0.48]$

E. $x \in [0.07, 1.07]$

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4. Determine the domain of the function below.

$$f(x) = \frac{4}{15x^2 + 27x + 12}$$

A. All Real numbers except $x = a,$ where $a \in [-1.37, -0.98]$

B. All Real numbers except $x = a$ and $x = b,$ where $a \in [-1.37, -0.98]$ and $b \in [-0.84, -0.59]$

C. All Real numbers except $x = a,$ where $a \in [-20.28, -19.69]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b,$ where $a \in [-20.28, -19.69]$ and b $[-9.15, -8.94]$

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

$$\frac{4x}{-4x+4} + \frac{-5x^2}{8x^2+4x-12} = \frac{-6}{-2x-3}$$

A. $x_1 \in [0.3, 1.3]$ and $x_2 \in [-7.33, -2.33]$

B. $x \in [-6.5, -2.7]$

C. $x_1 \in [0.3, 1.3]$ and $x_2 \in [-2, 2]$

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

E. $x \in [-1.8, -0.7]$

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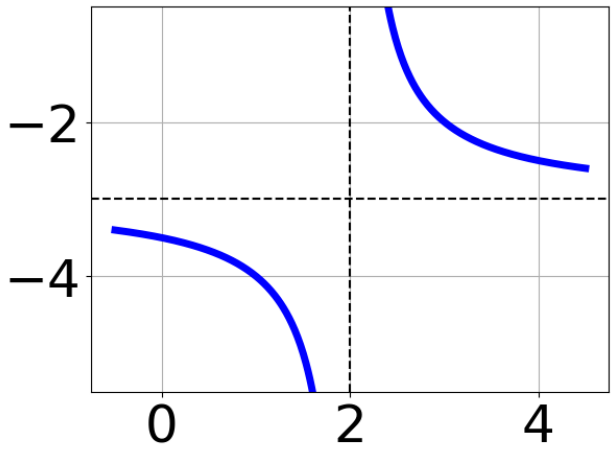
6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{x+2} - 4$

B. $f(x) = \dfrac{1}{(x+2)^2} - 4$

C. $f(x) = \dfrac{-1}{(x-2)^2} - 4$

D. $f(x) = \dfrac{-1}{x-2} - 4$

E. None of the above

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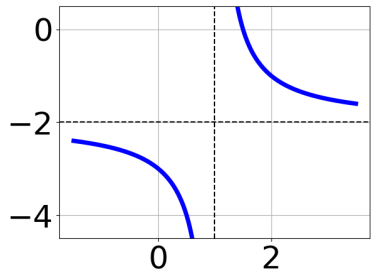
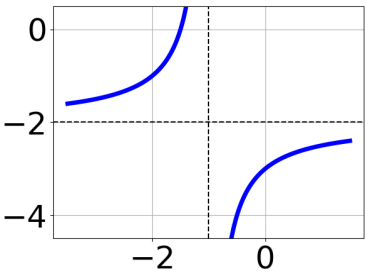
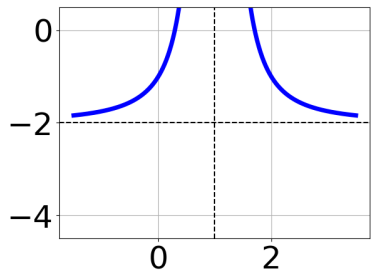
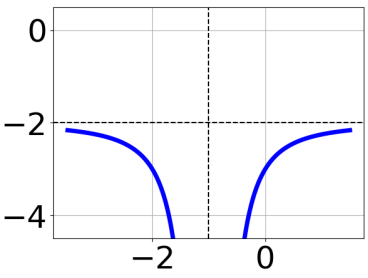
7. Choose the graph of the equation below.

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

A. 

C. 

B. 

D. 

E. None of the above.

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

$$\frac{39}{117x - 91} + 1 = \frac{39}{117x - 91}$$

A. $x_1 \in [-1, 0.2]$ and $x_2 \in [-1.22, 1.78]$

B. $x \in [0.78, 2.78]$

C. $x \in [-1, 0.2]$

D. $x_1 \in [0.5, 1.3]$ and $x_2 \in [-1.22, 1.78]$

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.

$$\frac{3x}{-2x + 2} + \frac{-3x^2}{-12x^2 + 6x + 6} = \frac{4}{6x + 3}$$

A. $x \in [-0.62, -0.24]$

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

C. $x \in [-2.46, -1.41]$

D. $x_1 \in [-0.35, 1.15]$ and $x_2 \in [0.8, 1.4]$

E. $x_1 \in [-0.35, 1.15]$ and $x_2 \in [-4, -1.4]$

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10. Determine the domain of the function below.

$$f(x) = \frac{5}{20x^2 + 46x + 24}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.75, -1.39]$ and $b \in [-1.03, -0.71]$

B. All Real numbers except $x = a$, where $a \in [-1.75, -1.39]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-24.7, -23.67]$ and $b \in [-20.31, -19.93]$

D. All Real numbers except $x = a$, where $a \in [-24.7, -23.67]$

E. All Real numbers.
