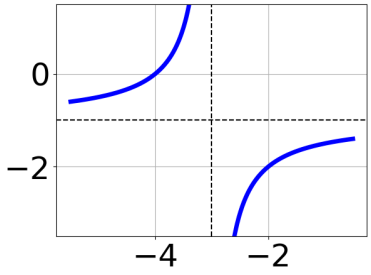
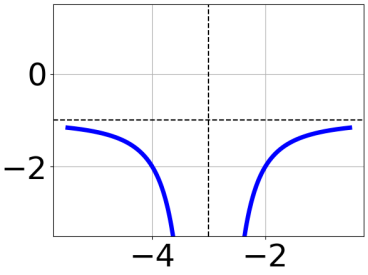
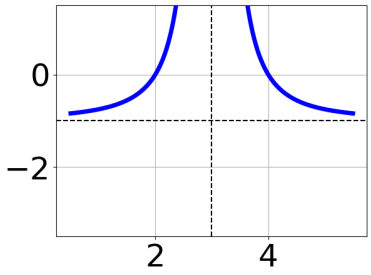
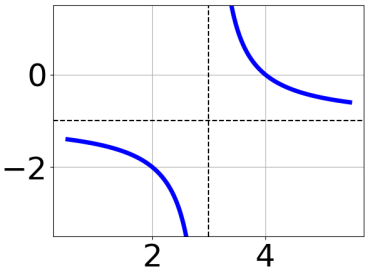
1. Choose the graph of the equation below.

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

A. 


C. 


B. 


D. 


E. None of the above.

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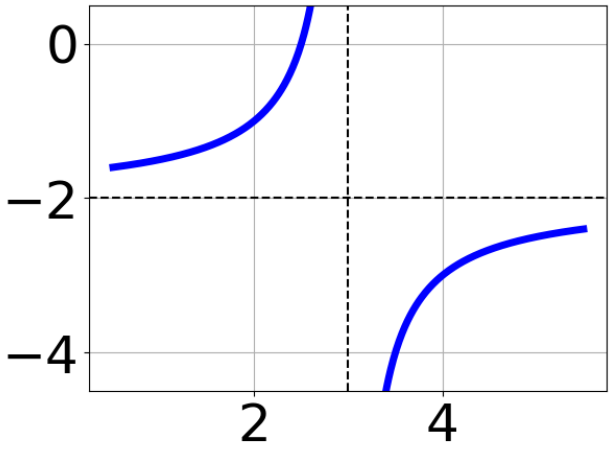
2. Choose the equation of the function graphed below.




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

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

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

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

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.

$$\frac{7}{4x-4} + 2 = \frac{-5}{-16x+16}$$

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

B. $x \in [0.28, 1.28]$

C. $x_1 \in [-2.8, -1.1]$ and $x_2 \in [-0.72, 2.28]$

D. $x_1 \in [-0.8, -0.3]$ and $x_2 \in [-0.72, 2.28]$

E. $x \in [-2.8, -1.1]$

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4. Determine the domain of the function below.

$$f(x) = \frac{3}{25x^2 + 40x + 15}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.87, -0.79]$ and $b \in [-0.87, -0.22]$

B. All Real numbers.

C. All Real numbers except $x = a$, where $a \in [-25.39, -24.25]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-25.39, -24.25]$ and $b$ $[-15.38, -14.04]$

E. All Real numbers except $x = a$, where $a \in [-1.87, -0.79]$

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

$$\frac{2x}{-5x+2} + \frac{-2x^2}{-35x^2+44x-12} = \frac{-3}{7x-6}$$

A. $x_1 \in [0.25, 0.38]$ and $x_2 \in [-1.6, 1.4]$

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

C. $x \in [0.57, 0.86]$

D. $x_1 \in [0.25, 0.38]$ and $x_2 \in [2, 6]$

E. $x \in [1.49, 2.35]$

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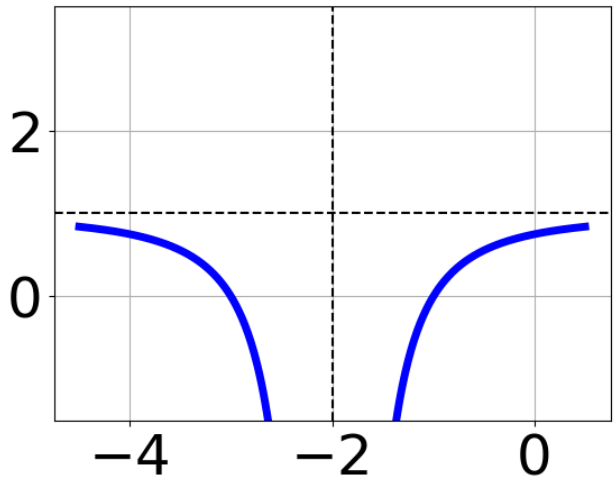
6. Choose the equation of the function graphed below.




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

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

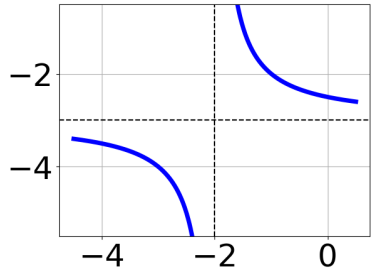
C. $f(x) = \dfrac{-1}{x+2} + 1$

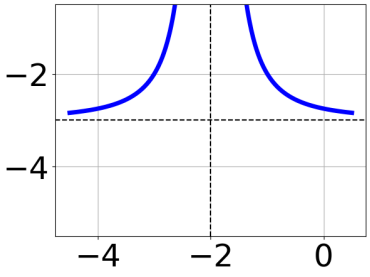
D. $f(x) = \dfrac{1}{(x-2)^2} + 1$

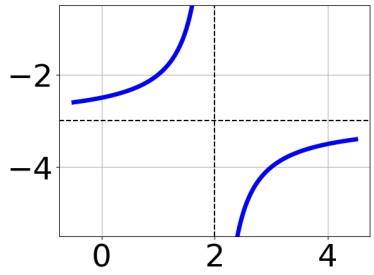
E. None of the above

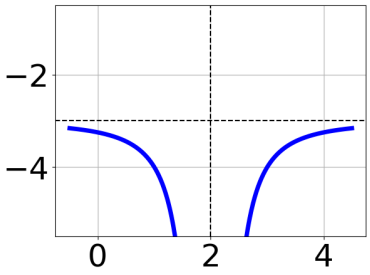
7. Choose the graph of the equation below.

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

A. 


C. 


B. 


D. 


E. None of the above.

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

$$\frac{9}{-6x+4} + -9 = \frac{-3}{-54x+36}$$

A. $x_1 \in [0.39, 0.47]$ and $x_2 \in [0.49, 1.49]$

B. $x_1 \in [-0.87, -0.82]$ and $x_2 \in [0.49, 1.49]$

C. $x \in [0.49, 1.49]$

D. $x \in [-0.87, -0.82]$

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

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

$$\frac{5x}{-2x-3} + \frac{-2x^2}{-8x^2-2x+15} = \frac{-5}{4x-5}$$

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

B. $x \in [0.58, 1.76]$

C. $x_1 \in [-0.99, -0.09]$ and $x_2 \in [-2.5, 0.5]$

D. $x \in [1.75, 2.45]$

E. $x_1 \in [-0.99, -0.09]$ and $x_2 \in [0.31, 6.31]$

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10. Determine the domain of the function below.

$$f(x) = \frac{6}{30x^2 - 11x - 30}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-4.83, 0.17]$ and $b \in [-0.8, 2.2]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-33, -29]$ and $b \in [30, 31]$

C. All Real numbers except $x = a$, where $a \in [-4.83, 0.17]$

D. All Real numbers.

E. All Real numbers except $x = a$, where $a \in [-33, -29]$

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