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

$$\frac{7x}{-2x-6} + \frac{-2x^2}{4x^2+26x+42} = \frac{7}{-2x-7}$$

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

B. $x_1 \in [-0.96, 2.07]$ and $x_2 \in [-3.12, -3.03]$

C. $x \in [-3.17, -2.84]$

D. $x_1 \in [-0.96, 2.07]$ and $x_2 \in [-3.02, -2.99]$

E. $x \in [-4.26, -3.23]$

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2. Determine the domain of the function below.

$$f(x) = \frac{4}{15x^2 - 42x + 24}$$

A. All Real numbers except $x = a$, where $a \in [0.4, 1]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b$, where $a \in [17.7, 19.4]$ and $b \in [19.7, 20.7]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [0.4, 1]$ and $b \in [1.6, 2.5]$

E. All Real numbers except $x = a$, where $a \in [17.7, 19.4]$

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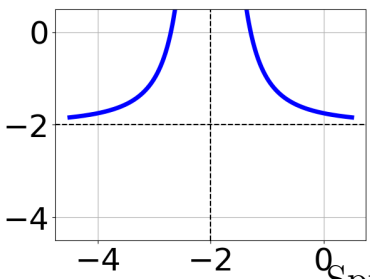
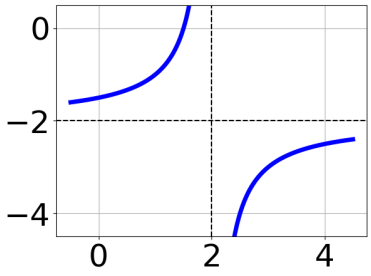
3. Choose the graph of the equation below.

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

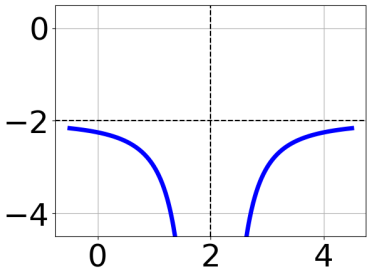
A.



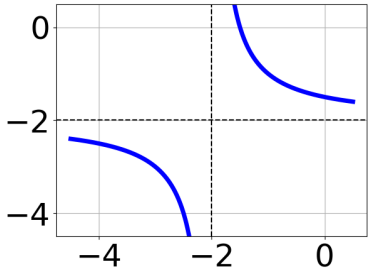
B.



D.



C.



E. None of the above.

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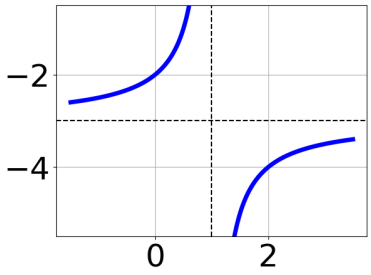
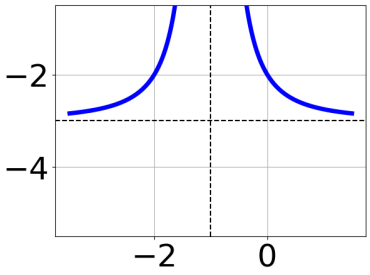
4. Choose the graph of the equation below.

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

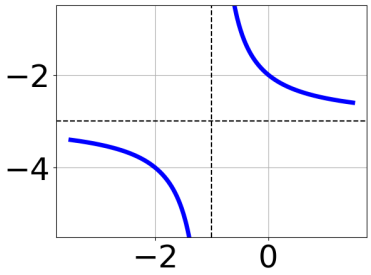
A.



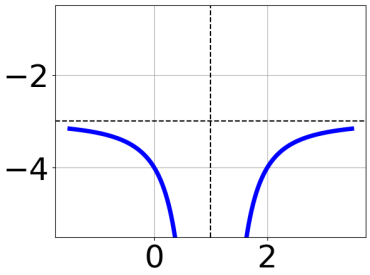
C.



B.



D.



E. None of the above.

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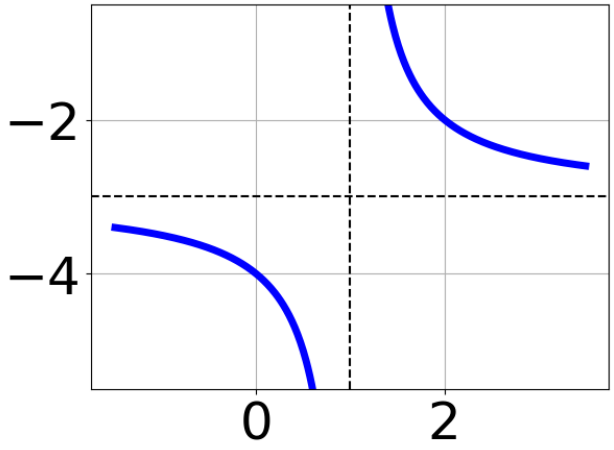
5. Choose the equation of the function graphed below.



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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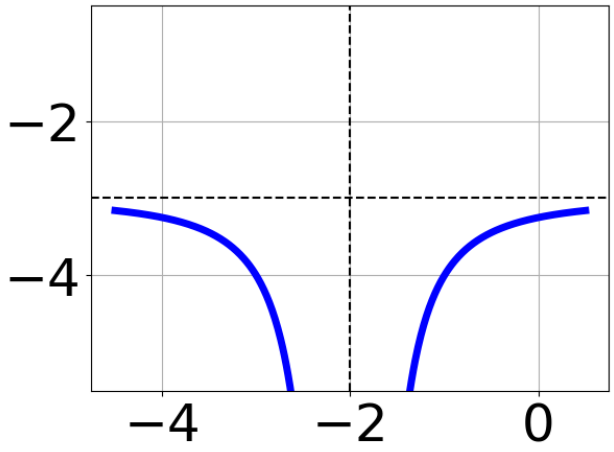
6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x-2} - 6$

B. $f(x) = \dfrac{1}{x+2} - 6$

C. $f(x) = \dfrac{-1}{(x-2)^2} - 6$

D. $f(x) = \dfrac{1}{(x+2)^2} - 6$

E. None of the above

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

$$\frac{-5}{8x-7} + 6 = \frac{3}{-56x+49}$$

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

B. $x_1 \in [-0.78, 0.22]$ and $x_2 \in [0.84, 1.04]$

C. $x \in [-0.78, 0.22]$

D. $x_1 \in [-0.03, 1.97]$ and $x_2 \in [0.98, 1.14]$

E. $x \in [-0.03, 1.97]$

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

$$\frac{3}{4x-5} + 7 = \frac{-9}{-16x+20}$$

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

B. $x_1 \in [0.48, 0.92]$ and $x_2 \in [0.22, 2.22]$

C. $x \in [1.22, 2.22]$

D. $x_1 \in [-1.68, -0.96]$ and $x_2 \in [0.22, 2.22]$

E. $x \in [-1.68, -0.96]$

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

$$\frac{-2x}{-4x+2} + \frac{-4x^2}{16x^2+4x-6} = \frac{-6}{-4x-3}$$

A. $x_1 \in [0.4, 1.3]$ and $x_2 \in [1.69, 10.69]$

B. $x \in [-1.98, -0.23]$

C. $x \in [2.74, 5.68]$

D. $x_1 \in [0.4, 1.3]$ and $x_2 \in [0.5, 2.5]$

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

10. Determine the domain of the function below.

$$f(x) = \frac{5}{36x^2 - 60x + 24}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [23.69, 24.49]$ and $b \in [35.81, 36.63]$

B. All Real numbers.

C. All Real numbers except $x = a$, where $a \in [0.55, 0.88]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [0.55, 0.88]$ and $b \in [0.96, 1.28]$

E. All Real numbers except $x = a$, where $a \in [23.69, 24.49]$