1. Determine the domain of the function below.

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

A. All Real numbers except $x = a$, where $a \in [-3.2, 0.8]$

B. All Real numbers except $x = a$, where $a \in [-32, -28]$

C. All Real numbers.

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-32, -28]$ and $b \in [17, 19]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-3.2, 0.8]$ and $b \in [2, 5]$

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

$$\frac{-2}{-7x + 2} + 3 = \frac{-4}{28x - 8}$$

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

B. $x \in [-0.6, -0.2]$

C. $x_1 \in [-0.1, 1.3]$ and $x_2 \in [0.37, 0.53]$

D. $x \in [0.14, 3.14]$

E. $x_1 \in [-0.6, -0.2]$ and $x_2 \in [0.1, 0.23]$

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

$$\frac{-3x + 0}{-5x + 6} + \frac{-2x^2 + 0x + 0}{-10x^2 + 22x - 12} = \frac{7}{2x - 2}$$

A. $x \in [3.58, 4.52]$

B. $x_1 \in [1.34, 2.52]$ and $x_2 \in [1.5, 4]$

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

D. $x \in [0.37, 1.36]$

E. $x_1 \in [1.34, 2.52]$ and $x_2 \in [-1.7, 2.1]$

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4. Determine the domain of the function below.

$$f(x) = \frac{3}{30x^2 - 43x + 15}$$

A. All Real numbers except $x = a$, where $a \in [14.7, 15.08]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [0.1, 0.79]$ and $b \in [0.67, 1.24]$

C. All Real numbers except $x = a$, where $a \in [0.1, 0.79]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [14.7, 15.08]$ and $b \in [29.71, 30.12]$

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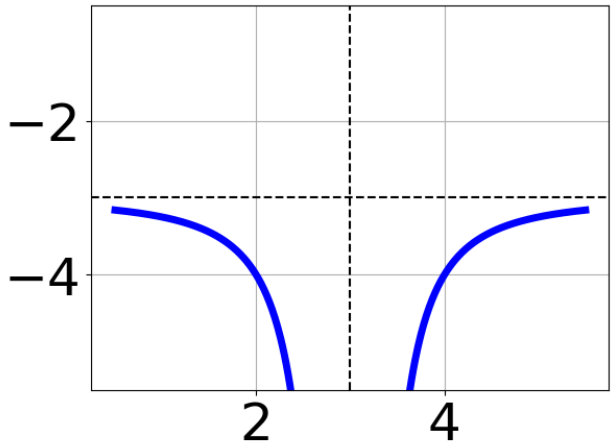
5. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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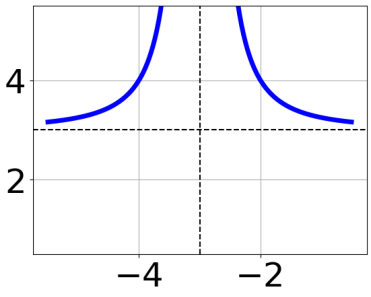
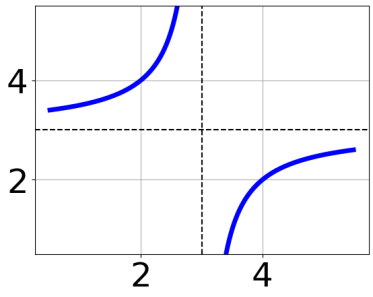
6. Choose the graph of the equation below.

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

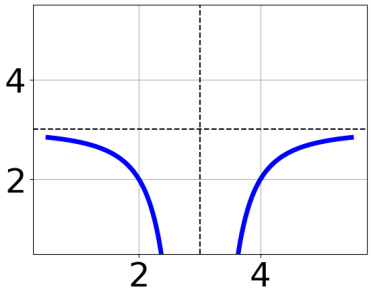
A.



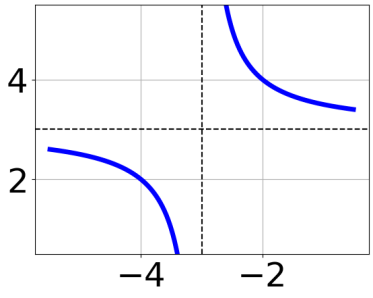
C.



B.



D.



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.

$$\frac{-27}{-45x-81} + 1 = \frac{-27}{-45x-81}$$

A. $x_1 \in [-4.8, -0.8]$ and $x_2 \in [-4.8, -0.8]$

B. $x_1 \in [-4.8, -0.8]$ and $x_2 \in [0.8, 2.8]$

C. $x \in [-2.8, -0.8]$

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

E. $x \in [1.8, 3.8]$

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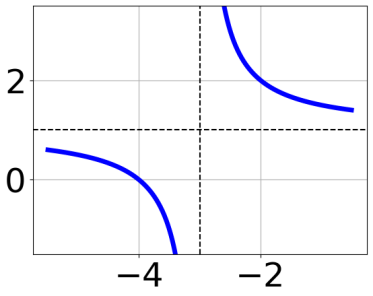
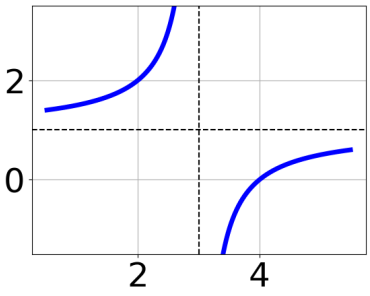
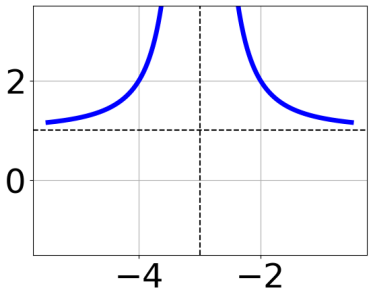
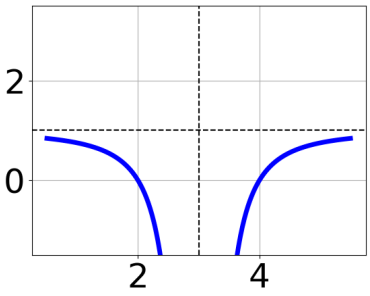
8. Choose the graph of the equation below.

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

A. 

C. 

B. 

D. 

E. None of the above.

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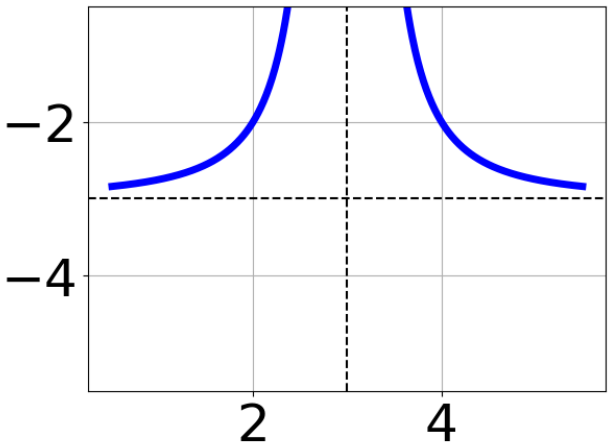
9. Choose the equation of the function graphed below.



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

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

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

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

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.

$$\frac{4x+0}{7x+2} + \frac{-5x^2+0x+0}{42x^2+26x+4} = \frac{2}{6x+2}$$

A. $x \in [-0.34, -0.33]$

B. $x_1 \in [-0.33, -0.32]$ and $x_2 \in [-0.59, 0.1]$

C. $x \in [0.64, 0.65]$

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

E. $x_1 \in [-0.33, -0.32]$ and $x_2 \in [0.36, 1.05]$
