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

$$\frac{5x}{4x+3} + \frac{-4x^2}{16x^2-8x-15} = \frac{3}{4x-5}$$

A. $x_1 \in [-2.7, 0.4]$ and $x_2 \in [-0.4, 6]$

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

C. $x_1 \in [-2.7, 0.4]$ and $x_2 \in [-1.8, -0.6]$

D. $x \in [0.4, 2]$

E. $x \in [1.9, 4.7]$

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2. Determine the domain of the function below.

$$f(x) = \frac{5}{30x^2-49x+20}$$

A. All Real numbers except $x = a,$ where $a \in [19.98, 20.01]$

B. All Real numbers except $x = a$ and $x = b,$ where $a \in [0.77, 0.83]$ and $b \in [0.82, 0.86]$

C. All Real numbers except $x = a$ and $x = b,$ where $a \in [19.98, 20.01]$ and $b \in [29.97, 30.02]$

D. All Real numbers except $x = a,$ where $a \in [0.77, 0.83]$

E. All Real numbers.

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

$$\frac{-60}{60x+30} + 1 = \frac{-60}{60x+30}$$

A. $x_1 \in [-2.7, -0.4]$ and $x_2 \in [-0.3, 1.4]$

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

C. $x \in [-2.5, 0.5]$

D. $x_1 \in [-2.7, -0.4]$ and $x_2 \in [-1.5, 0]$

E. $x \in [-0.2, 0.8]$

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

$$\frac{24}{48x - 36} + 1 = \frac{24}{48x - 36}$$

A. $x \in [-0.25, 2.75]$

B. $x \in [-0.75, 0.25]$

C. $x_1 \in [0.75, 2.75]$ and $x_2 \in [-0.25, 1.75]$

D. $x_1 \in [-0.75, 0.25]$ and $x_2 \in [-0.25, 1.75]$

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

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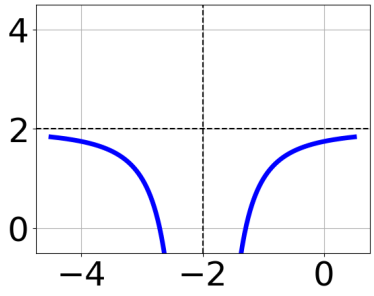
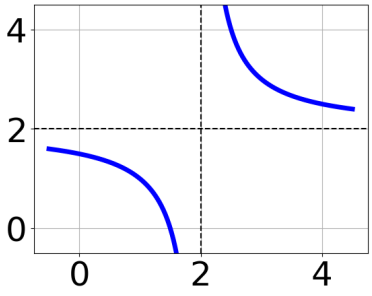
5. Choose the graph of the equation below.

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

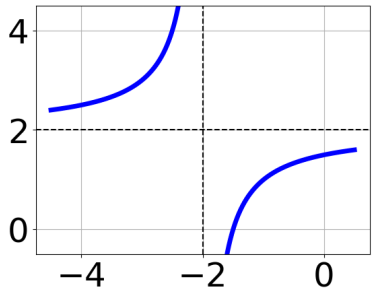
A.



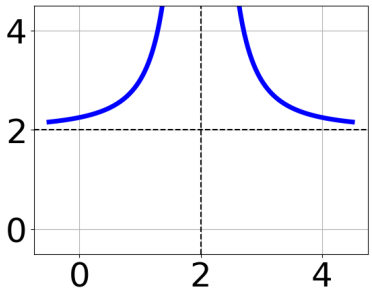
C.



B.



D.



E. None of the above.

6. Determine the domain of the function below.

$$f(x) = \frac{5}{18x^2 + 42x + 24}$$

A. All Real numbers except $x = a$, where $a \in [-36.1, -35.98]$

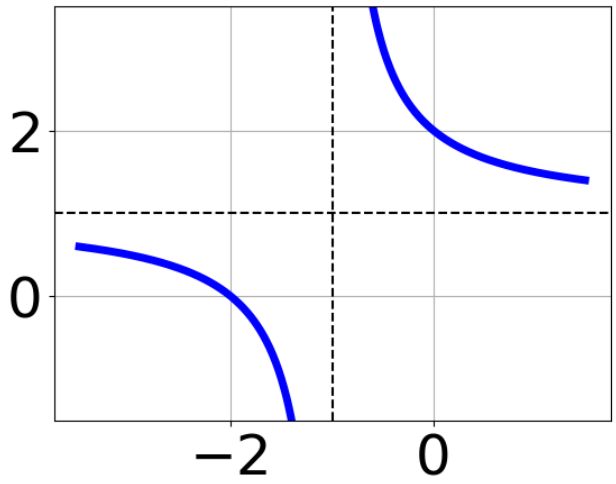
B. All Real numbers except $x = a$ and $x = b$, where $a \in [-36.1, -35.98]$ and $b \in [-12.2, -11.74]$

C. All Real numbers except $x = a$, where $a \in [-1.5, -1.17]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.5, -1.17]$ and $b \in [-1.15, -0.86]$

7. Choose the equation of the function graphed below.



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

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

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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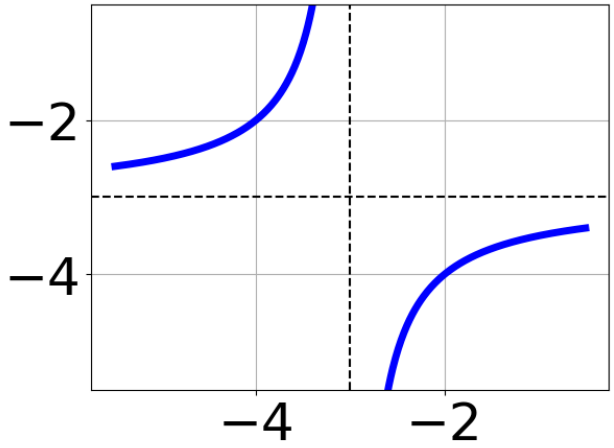
8. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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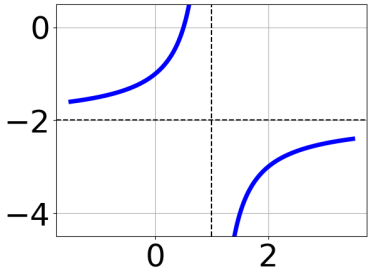
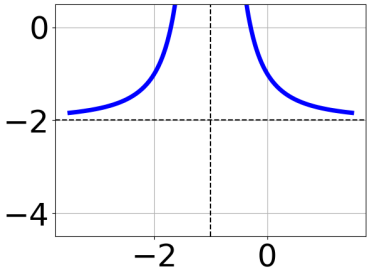
9. Choose the graph of the equation below.

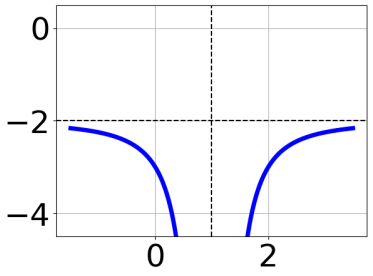
$$f(x) = \frac{1}{(x-1)^2} + 2$$

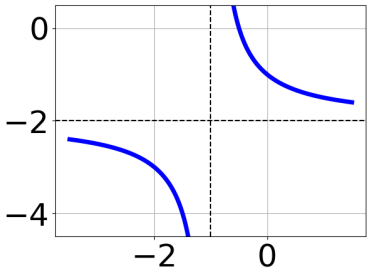
A.



B.



C. 

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.

$$\frac{-6x}{-5x-3} + \frac{-4x^2}{-25x^2-5x+6} = \frac{4}{5x-2}$$

A. $x \in [0.95, 2.51]$

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

C. $x \in [-0.23, 0.97]$

D. $x_1 \in [-0.59, 0.11]$ and $x_2 \in [-0.4, 3.6]$

E. $x_1 \in [-0.59, 0.11]$ and $x_2 \in [-1.2, 0.2]$
