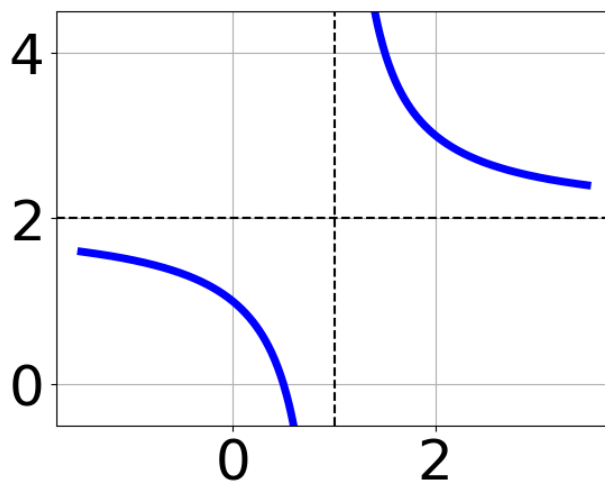1. Choose the equation of the function graphed below.

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

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

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

D. $f(x) = \dfrac{1}{x-1} + 2$
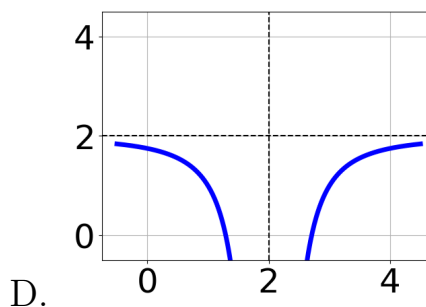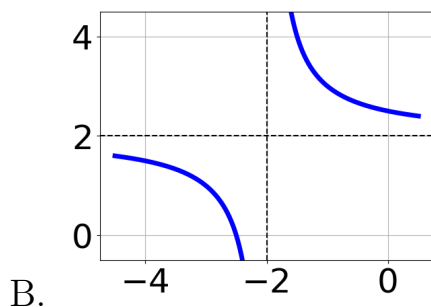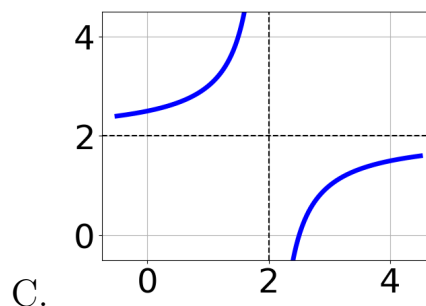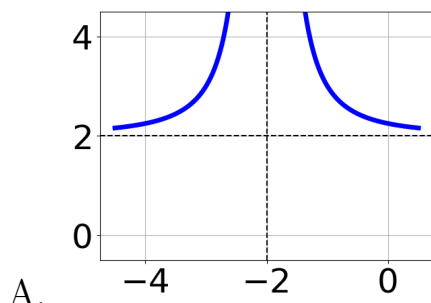
E. None of the above

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

$$\frac{-63}{28x+14} + 1 = \frac{-63}{28x+14}$$

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

B. $x \in [-0.5, 0.5]$

C. $x \in [0.1, 0.6]$

D. $x_1 \in [-1, -0.3]$ and $x_2 \in [0.2, 1.1]$

E. $x_1 \in [-1, -0.3]$ and $x_2 \in [-1.2, 0.2]$

3. Choose the graph of the equation below.

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

A.

C.

B.

D.

E. None of the above.

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

$$\frac{7x}{4x+3} + \frac{-3x^2}{8x^2 + 26x + 15} = \frac{-2}{2x+5}$$

A. $x \in [-0.75, 2.24]$

B. $x_1 \in [-4.13, -2.89]$ and $x_2 \in [-1.61, -0.48]$

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

D. $x \in [-3.66, -1.02]$

E. $x_1 \in [-4.13, -2.89]$ and $x_2 \in [-0.35, 0.12]$

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

$$\frac{56}{56x + 32} + 1 = \frac{56}{56x + 32}$$

A. $x_1 \in [-1.57, 0.43]$ and $x_2 \in [-0.5, 1]$

B. $x \in [-0.57, 0.43]$

C. $x \in [0.57, 2.57]$

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

E. $x_1 \in [-1.57, 0.43]$ and $x_2 \in [-1.5, 0.4]$

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6. Determine the domain of the function below.
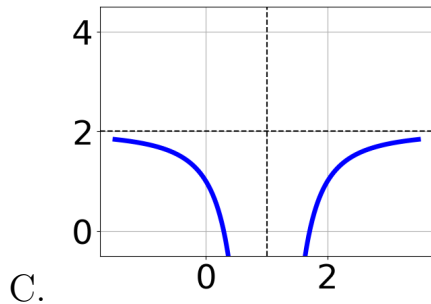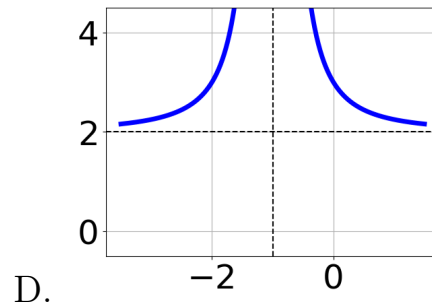
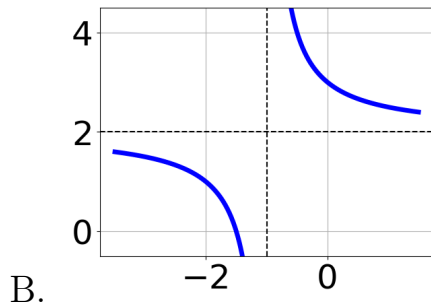$$f(x) = \frac{6}{20x^2 + 31x + 12}$$

A. All Real numbers except $x = a$, where $a \in [-0.82, -0.79]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-20.05, -19.95]$ and $b \in [-12.05, -11.96]$

C. All Real numbers.

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.82, -0.79]$ and $b \in [-0.76, -0.73]$

E. All Real numbers except $x = a$, where $a \in [-20.05, -19.95]$

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7. Choose the graph of the equation below.
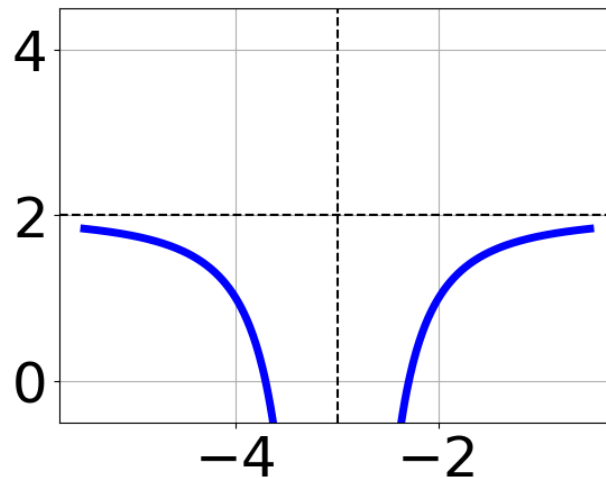
$$f(x) = \frac{1}{x + 1} + 2$$

A.

B.

D.

C.
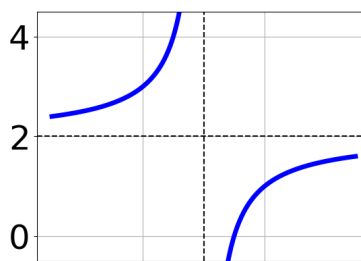
E. None of the above.

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

$$\frac{-2x}{-4x-4} + \frac{-7x^2}{-8x^2 - 36x - 28} = \frac{-5}{2x+7}$$

A. $x_1 \in [-3.29, -1.73]$ and $x_2 \in [-1.04, -0.9]$

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

C. $x_1 \in [-3.29, -1.73]$ and $x_2 \in [-0.91, -0.75]$

D. $x \in [-2.09, 0.72]$

E. $x \in [-3.97, -3.05]$

9. Choose the equation of the function graphed below.

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

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

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

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

E. None of the above

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10. Determine the domain of the function below.

$$f(x) = \frac{4}{20x^2 + 54x + 36}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-30.02, -29.55]$ and $b \in [-24.02, -23.73]$

B. All Real numbers except $x = a$, where $a \in [-1.58, -1.45]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.58, -1.45]$ and $b \in [-1.39, -1.11]$

D. All Real numbers except $x = a$, where $a \in [-30.02, -29.55]$

E. All Real numbers.