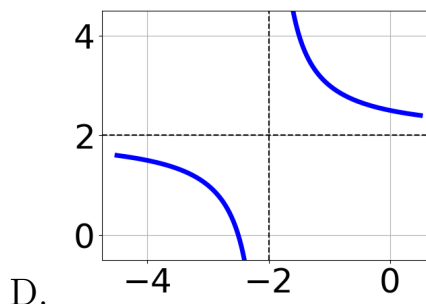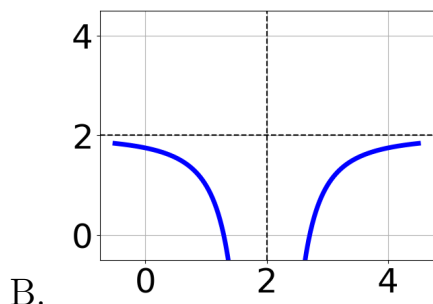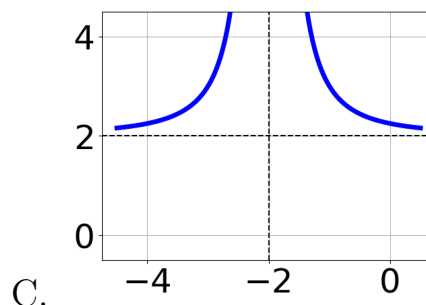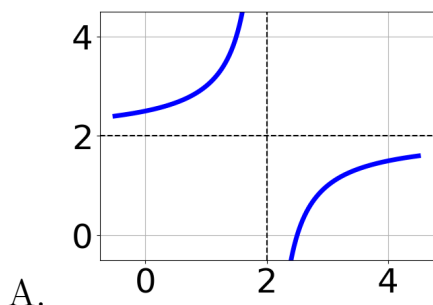1. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6}{7x-3} + -4 = \frac{2}{-42x+18}$$

   A. $x \in [-0.67, -0.6]$

   B. $x_1 \in [0.08, 0.22]$ and $x_2 \in [-0.77, 1.23]$

   C. $x \in [0.23, 1.23]$

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

   E. $x_1 \in [-0.67, -0.6]$ and $x_2 \in [-0.77, 1.23]$

---

2. Choose the graph of the equation below.

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

A.

C.

B.

D.

   E. None of the above.

---

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

$$\frac{98}{-112x + 112} + 1 = \frac{98}{-112x + 112}$$

A. $x_1 \in [-4, 0]$ and $x_2 \in [1, 2]$

B. $x \in [-4, 0]$

C. $x_1 \in [0, 4]$ and $x_2 \in [1, 2]$

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

E. $x \in [1.0, 2.0]$

---

4. Determine the domain of the function below.

$$f(x) = \frac{3}{15x^2 - 24x + 9}$$

A. All Real numbers except $x = a$, where $a \in [0.44, 0.71]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b$, where $a \in [8.87, 9.33]$ and $b \in [14.87, 15.1]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [0.44, 0.71]$ and $b \in [0.8, 1.45]$

E. All Real numbers except $x = a$, where $a \in [8.87, 9.33]$

5. Choose the equation of the function graphed below.
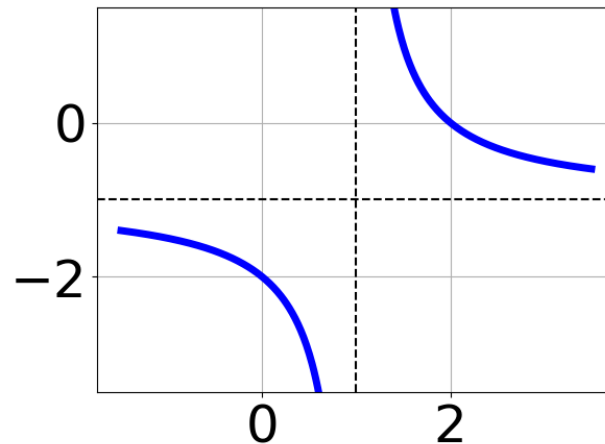
A. $f(x) = \dfrac{-1}{x-1} + 3$

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

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

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

E. None of the above

6. Determine the domain of the function below.

$$f(x) = \dfrac{3}{30x^2 - 6x - 36}$$

A. All Real numbers.

B. All Real numbers except $x = a$, where $a \in [-37, -29]$

C. All Real numbers except $x = a$, where $a \in [-2, 0]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-37, -29]$ and $b \in [29, 31]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-2, 0]$ and $b \in [-0.8, 5.2]$

7. Choose the equation of the function graphed below.
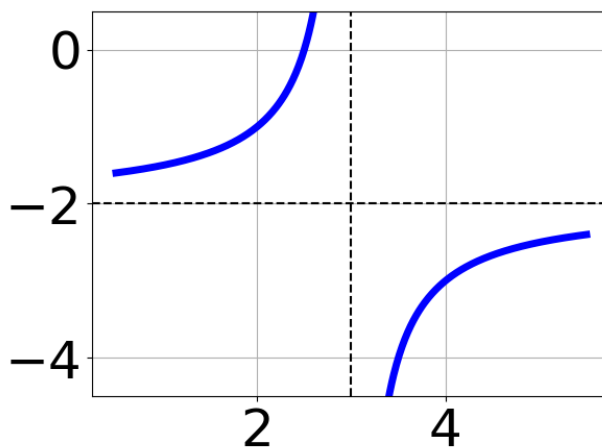
A. $f(x) = \dfrac{1}{x-3} - 4$

B. $f(x) = \dfrac{1}{(x-3)^2} - 4$

C. $f(x) = \dfrac{-1}{(x+3)^2} - 4$

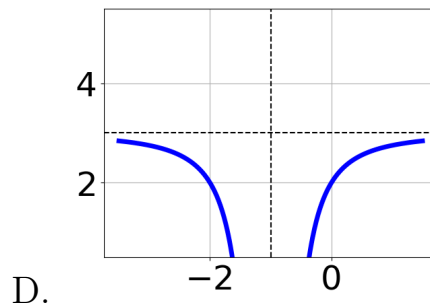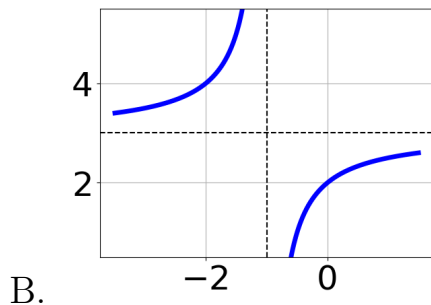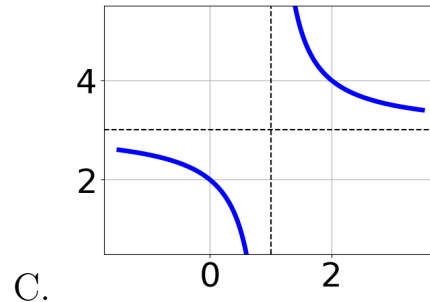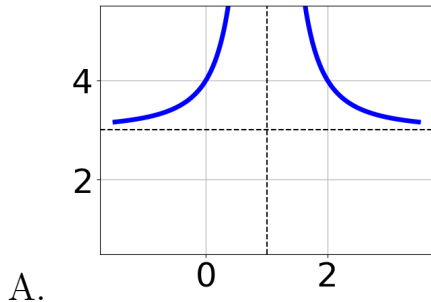D. $f(x) = \dfrac{-1}{x+3} - 4$

E. None of the above

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

$$\frac{-7x}{-7x+2} + \frac{-6x^2}{28x^2 - 43x + 10} = \frac{3}{-4x+5}$$

A. $x \in [1.03, 2.15]$

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

C. $x_1 \in [-1.12, 0.7]$ and $x_2 \in [-0.32, 0.42]$

D. $x_1 \in [-1.12, 0.7]$ and $x_2 \in [0.87, 1.03]$

E. $x \in [-0.17, 1.08]$

9. Choose the graph of the equation below.

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

A.

C.

B.

D.

E. None of the above.

---

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

$$\frac{6x}{7x+2} + \frac{-7x^2}{-42x^2 + 2x + 4} = \frac{-3}{-6x+2}$$

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

B. $x_1 \in [-0.76, 0.14]$ and $x_2 \in [-1.12, 0.47]$

C. $x \in [0.53, 1.03]$

D. $x \in [0.3, 0.48]$

E. $x_1 \in [-0.76, 0.14]$ and $x_2 \in [0.74, 3.18]$