

1. Determine the domain of the function below.

$$f(x) = \frac{6}{9x^2 + 3x - 20}$$

- A. All Real numbers except $x = a$ and $x = b$, where $a \in [-16, -14]$ and $b \in [12, 14]$
- B. All Real numbers except $x = a$ and $x = b$, where $a \in [-3.67, 0.33]$ and $b \in [1.33, 5.33]$
- C. All Real numbers.
- D. All Real numbers except $x = a$, where $a \in [-16, -14]$
- E. All Real numbers except $x = a$, where $a \in [-3.67, 0.33]$

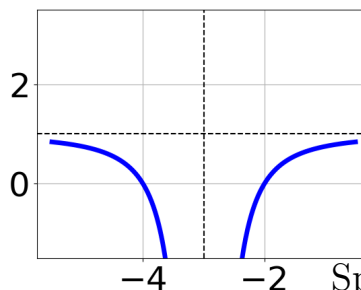
2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-2x}{-7x + 6} + \frac{-6x^2}{28x^2 + 25x - 42} = \frac{-4}{-4x - 7}$$

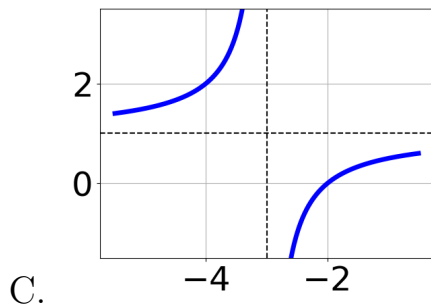
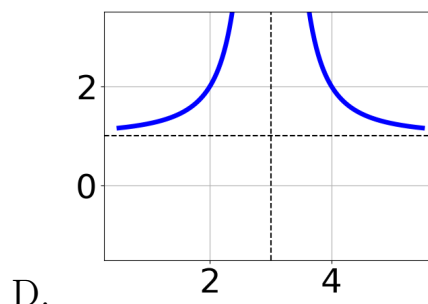
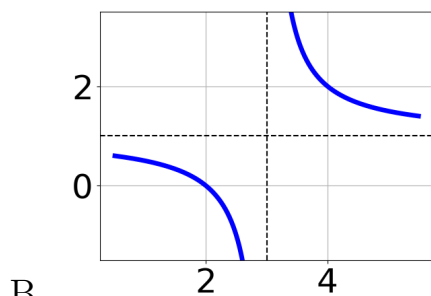
- A. $x \in [3.5, 7.7]$
- B. $x_1 \in [2.5, 3.8]$ and $x_2 \in [-1.14, 3.86]$
- C. All solutions lead to invalid or complex values in the equation.
- D. $x \in [-4.1, 0.9]$
- E. $x_1 \in [2.5, 3.8]$ and $x_2 \in [2, 9]$

3. Choose the graph of the equation below.

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



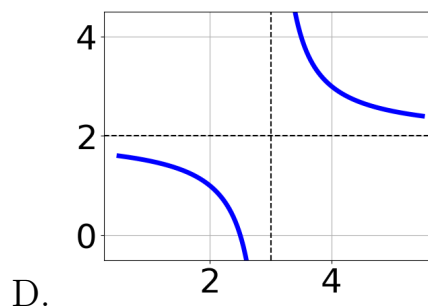
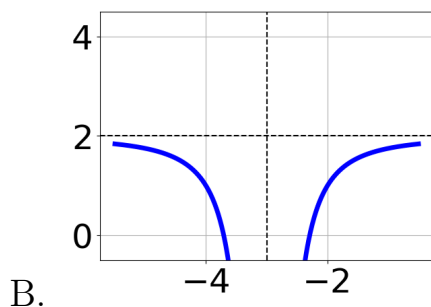
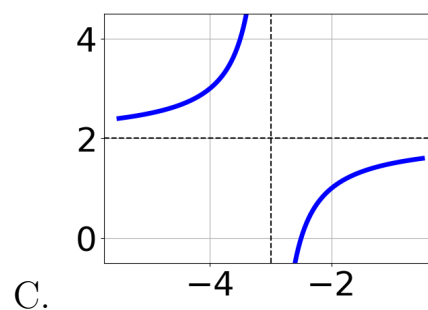
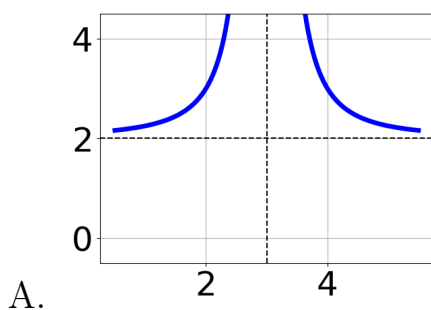
A.



E. None of the above.

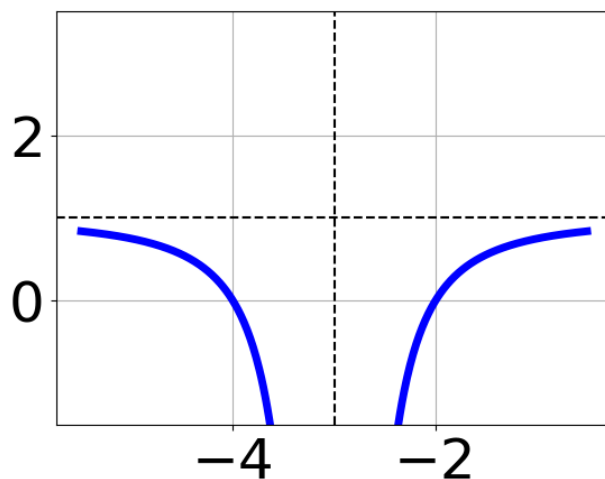
4. Choose the graph of the equation below.

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



E. None of the above.

5. Choose the equation of the function graphed below.



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

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

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

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

E. None of the above

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

$$\frac{-4x}{3x+7} + \frac{-6x^2}{-15x^2 - 23x + 28} = \frac{6}{-5x+4}$$

A. $x_1 \in [-5.8, 0.2]$ and $x_2 \in [-5.33, 0.67]$

B. $x \in [1.7, 6.1]$

C. $x \in [-0.1, 2.2]$

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

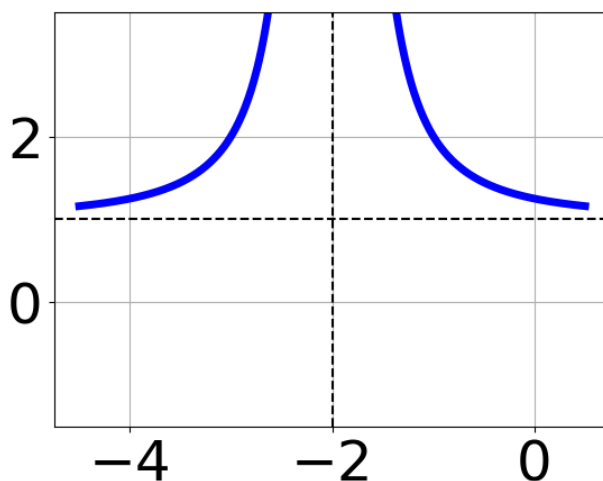
E. $x_1 \in [-5.8, 0.2]$ and $x_2 \in [2.33, 12.33]$

7. Determine the domain of the function below.

$$f(x) = \frac{5}{36x^2 + 54x + 18}$$

- A. All Real numbers except $x = a$, where $a \in [-36.22, -34.75]$
- B. All Real numbers except $x = a$, where $a \in [-2.17, -0.85]$
- C. All Real numbers.
- D. All Real numbers except $x = a$ and $x = b$, where $a \in [-36.22, -34.75]$ and $b \in [-18.97, -17.51]$
- E. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.17, -0.85]$ and $b \in [-0.79, -0.36]$

8. Choose the equation of the function graphed below.



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

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

E. None of the above

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

$$\frac{-6}{-4x-9} + 6 = \frac{5}{20x+45}$$

A. $x \in [0.9, 4.1]$

B. $x \in [-3.46, -1.46]$

C. $x_1 \in [-4.1, -2.7]$ and $x_2 \in [-2.46, -0.46]$

D. $x_1 \in [-2.6, -2.4]$ and $x_2 \in [0.04, 3.04]$

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

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

$$\frac{3}{-4x+8} + -2 = \frac{-4}{-32x+64}$$

A. $x \in [1.56, 2.56]$

B. $x_1 \in [0.5, 1.31]$ and $x_2 \in [1.56, 3.56]$

C. $x_1 \in [-2.7, -1.89]$ and $x_2 \in [1.56, 3.56]$

D. $x \in [-2.7, -1.89]$

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