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

$$\frac{-4x}{-4x-7}+\frac{-6x^2}{-16x^2-8x+35}=\frac{5}{4x-5}$$

A. $x \in [0.45, 1.44]$

B. $x_1 \in [-0.73, 0.32]$ and $x_2 \in [0.46, 9.46]$

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

D. $x_1 \in [-0.73, 0.32]$ and $x_2 \in [-8.75, -0.75]$

E. $x \in [2.33, 3.1]$

---

2. Determine the domain of the function below.

$$f(x)=\frac{4}{30x^2+2x-12}$$

A. All Real numbers except $x = a$, where $a \in [-27, -22]$

B. All Real numbers except $x = a$, where $a \in [-0.67, 0.33]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-27, -22]$ and $b \in [11, 17]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.67, 0.33]$ and $b \in [0.6, 2.6]$

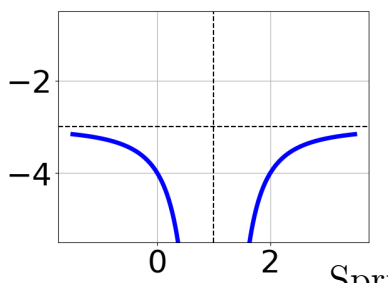
E. All Real numbers.

---

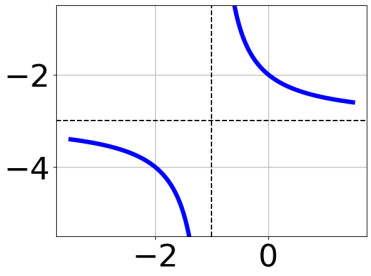
3. Choose the graph of the equation below.

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

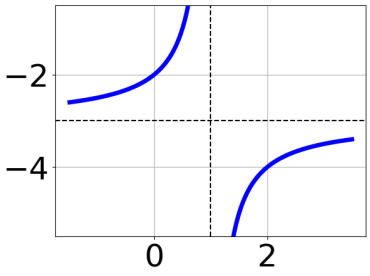
A.



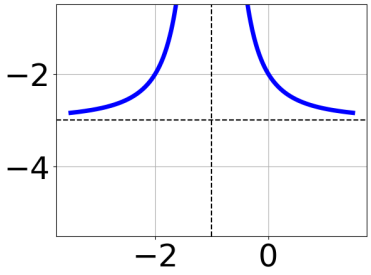
B.



D.



C.



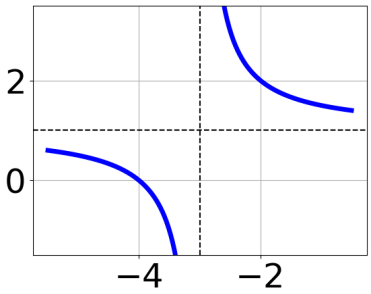
E. None of the above.

---

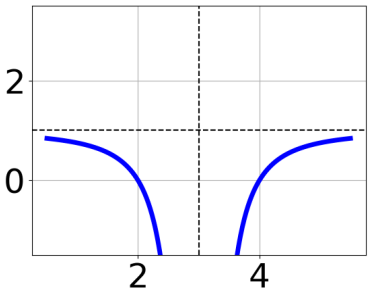
4. Choose the graph of the equation below.

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

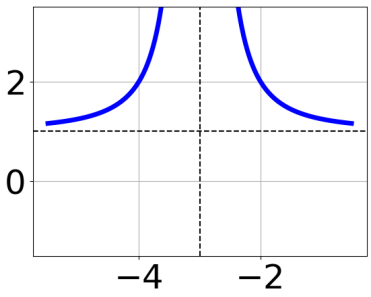
A.



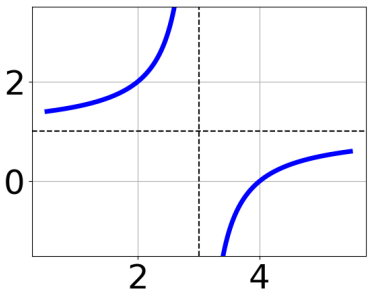
C.



B.



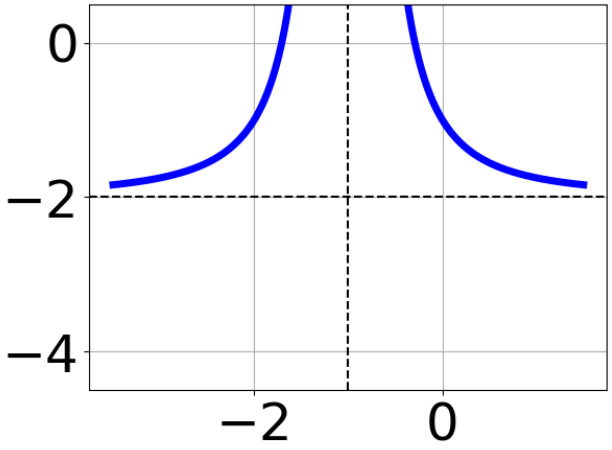
D.



E. None of the above.

---

5. Choose the equation of the function graphed below.



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

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

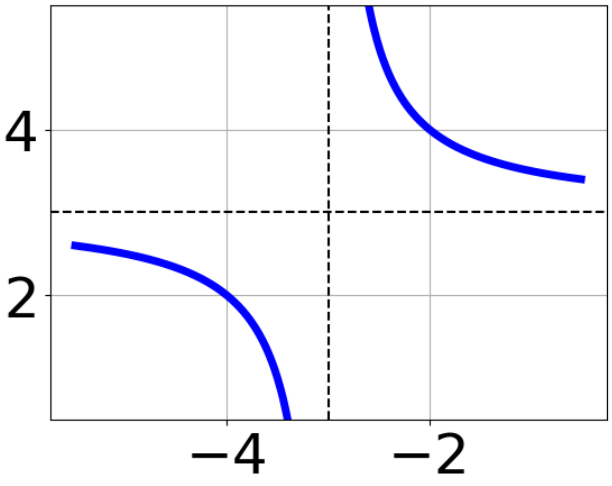
C. $f(x) = \dfrac{1}{x+1} - 2$

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

E. None of the above

---

6. 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

---

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

$$\frac{-4}{-2x-2} + -2 = \frac{4}{16x+16}$$

A. $x_1 \in [-2.12, 0.88]$ and $x_2 \in [1.8, 2.1]$

B. $x_1 \in [-2.12, 0.88]$ and $x_2 \in [-0.4, 1.6]$

C. $x \in [-0.12, 0.88]$

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

E. $x \in [0.88, 2.88]$

---

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

$$\frac{126}{-84x-126} + 1 = \frac{126}{-84x-126}$$

A. $x_1 \in [-1.5, 0.5]$ and $x_2 \in [-1.5, 0.5]$

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

C. $x \in [-0.5, 3.5]$

D. $x_1 \in [-1.5, 0.5]$ and $x_2 \in [1.5, 2.5]$

E. $x \in [-1.5, 0.5]$

---

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

$$\frac{-6x}{-7x+7} + \frac{-6x^2}{-42x^2+7x+35} = \frac{-5}{6x+5}$$

A. $x \in [-2.21, -1.95]$

B. $x \in [-1.41, -0.27]$

C. $x_1 \in [-0.13, 0.94]$ and $x_2 \in [1, 7]$

D. $x_1 \in [-0.13, 0.94]$ and $x_2 \in [-4.97, -0.97]$

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

---

10. Determine the domain of the function below.

$$f(x) = \frac{5}{24x^2 - 6x - 30}$$

A. All Real numbers except $x = a$, where $a \in [-36.7, -35.4]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-36.7, -35.4]$ and $b \in [19.3, 20.3]$

C. All Real numbers except $x = a$, where $a \in [-1.2, -0.4]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.2, -0.4]$ and $b \in [0.5, 1.8]$

E. All Real numbers.
