

1. Which of the following intervals describes the Domain of the function below?

$$f(x) = -e^{x-1} + 4$$

- A. $(-\infty, a), a \in [4, 5]$
 - B. $[a, \infty), a \in [-11, -2]$
 - C. $(a, \infty), a \in [-11, -2]$
 - D. $(-\infty, a], a \in [4, 5]$
 - E. $(-\infty, \infty)$
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2. Solve the equation for x and choose the interval that contains x (if it exists).

$$12 = \sqrt[4]{\frac{5}{e^{7x}}}$$

- A. $x \in [-7.96, -6.34]$
 - B. $x \in [0.38, 1.29]$
 - C. $x \in [-0.6, -0.15]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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3. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$5^{5x-2} = 16^{4x-3}$$

- A. $x \in [-6.5, -4.1]$
 - B. $x \in [-0.5, 1]$
 - C. $x \in [-2.1, -0.3]$
 - D. $x \in [1.6, 2.3]$
 - E. There is no Real solution to the equation.
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4. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$4^{-3x+4} = \left(\frac{1}{25}\right)^{2x-5}$$

- A. $x \in [-6, -2.4]$
 - B. $x \in [1.2, 2.2]$
 - C. $x \in [-2.3, 0]$
 - D. $x \in [2.5, 6.2]$
 - E. There is no Real solution to the equation.
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5. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_2(-3x + 6) + 6 = 3$$

- A. $x \in [-0.89, 0.21]$
 - B. $x \in [-1.18, -0.88]$
 - C. $x \in [-5.26, -4.67]$
 - D. $x \in [1.37, 2.03]$
 - E. There is no Real solution to the equation.
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6. Which of the following intervals describes the Domain of the function below?

$$f(x) = e^{x+8} + 3$$

- A. $(-\infty, a), a \in [3, 7]$
 - B. $[a, \infty), a \in [-4, 0]$
 - C. $(-\infty, a], a \in [3, 7]$
 - D. $(a, \infty), a \in [-4, 0]$
 - E. $(-\infty, \infty)$
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7. Which of the following intervals describes the Domain of the function below?

$$f(x) = -\log_2(x + 9) - 6$$

- A. $(-\infty, a], a \in [5.4, 8.1]$
 - B. $(a, \infty), a \in [-11, -8.1]$
 - C. $(-\infty, a), a \in [7.4, 11.7]$
 - D. $[a, \infty), a \in [-6.7, -4.6]$
 - E. $(-\infty, \infty)$
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8. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_4(2x + 7) + 4 = 3$$

- A. $x \in [-3.21, -2.13]$
 - B. $x \in [-3.57, -3.05]$
 - C. $x \in [28.2, 29.22]$
 - D. $x \in [3.97, 4.72]$
 - E. There is no Real solution to the equation.
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9. Solve the equation for x and choose the interval that contains x (if it exists).

$$10 = \ln \sqrt[6]{\frac{11}{e^{9x}}}$$

- A. $x \in [-6.46, -5.94]$
 - B. $x \in [-2.11, -1.85]$
 - C. $x \in [-1.82, -1.5]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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10. Which of the following intervals describes the Range of the function below?

$$f(x) = -\log_2(x + 2) + 5$$

- A. $(-\infty, a), a \in [-8.6, -4.7]$
 - B. $(-\infty, a), a \in [3.2, 6.4]$
 - C. $[a, \infty), a \in [1.6, 3.9]$
 - D. $[a, \infty), a \in [-4.5, -1.1]$
 - E. $(-\infty, \infty)$
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