

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

$$f(x) = -\log_2(x + 8) - 9$$

- A. $[a, \infty), a \in [6.52, 8.23]$
 - B. $(-\infty, a), a \in [8.02, 9.9]$
 - C. $[a, \infty), a \in [-8.57, -6.5]$
 - D. $(-\infty, a), a \in [-9.63, -8.63]$
 - E. $(-\infty, \infty)$
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2. Which of the following intervals describes the Domain of the function below?

$$f(x) = e^{x+1} - 9$$

- A. $(-\infty, a], a \in [-13, -8]$
 - B. $(a, \infty), a \in [9, 17]$
 - C. $(-\infty, a), a \in [-13, -8]$
 - D. $[a, \infty), a \in [9, 17]$
 - E. $(-\infty, \infty)$
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3. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$4^{2x+2} = 125^{3x-3}$$

- A. $x \in [3.7, 6.1]$
 - B. $x \in [0.2, 1]$
 - C. $x \in [16, 17.6]$
 - D. $x \in [0.9, 2.8]$
 - E. There is no Real solution to the equation.
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4. Which of the following intervals describes the Domain of the function below?

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

- A. $(-\infty, a), a \in [3, 10]$
 - B. $(-\infty, a], a \in [3, 10]$
 - C. $[a, \infty), a \in [-12, -3]$
 - D. $(a, \infty), a \in [-12, -3]$
 - E. $(-\infty, \infty)$
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5. Solve the equation for x and choose the interval that contains x (if it exists).

$$13 = \ln \sqrt[4]{\frac{20}{e^{9x}}}$$

- A. $x \in [-2.3, -1.4]$
 - B. $x \in [-3.6, -1.9]$
 - C. $x \in [-7.5, -4.7]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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6. Which of the following intervals describes the Domain of the function below?

$$f(x) = -\log_2(x - 7) - 2$$

- A. $(-\infty, a], a \in [-0.2, 5.6]$
 - B. $(-\infty, a), a \in [-9.3, -5.4]$
 - C. $(a, \infty), a \in [5.1, 9]$
 - D. $[a, \infty), a \in [-2.2, 0.2]$
 - E. $(-\infty, \infty)$
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7. Solve the equation for x and choose the interval that contains x (if it exists).

$$11 = \sqrt[3]{\frac{18}{e^{8x}}}$$

- A. $x \in [-4.76, -4.38]$
 - B. $x \in [-0.26, 0.09]$
 - C. $x \in [0.12, 0.96]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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8. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$4^{-5x-2} = 49^{-3x+4}$$

- A. $x \in [-10.17, -5.17]$
 - B. $x \in [-3, 0]$
 - C. $x \in [1.26, 3.26]$
 - D. $x \in [1.87, 7.87]$
 - 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 the solution (if it exists).

$$\log_5(2x + 7) + 6 = 2$$

- A. $x \in [-515.5, -509.5]$
 - B. $x \in [-6.5, -1.5]$
 - C. $x \in [7, 11]$
 - D. $x \in [-510.5, -502.5]$
 - E. There is no Real solution to the equation.
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10. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_4(2x + 7) + 6 = 3$$

- A. $x \in [26.5, 30.5]$
 - B. $x \in [36, 40]$
 - C. $x \in [-5.49, -2.49]$
 - D. $x \in [43, 45]$
 - E. There is no Real solution to the equation.
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