

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

$$f(x) = \log_2(x - 1) - 5$$

- A. $[a, \infty), a \in [0.6, 2.4]$
 - B. $[a, \infty), a \in [-4.8, 0.2]$
 - C. $(-\infty, a), a \in [2.9, 5.6]$
 - D. $(-\infty, a), a \in [-7.2, -2.9]$
 - E. $(-\infty, \infty)$
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2. Solve the equation for x and choose the interval that contains x (if it exists).

$$19 = \ln \sqrt[4]{\frac{12}{e^{4x}}}$$

- A. $x \in [-21.38, -13.38]$
 - B. $x \in [-5.57, -0.57]$
 - C. $x \in [-8.88, -5.88]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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3. Which of the following intervals describes the Range of the function below?

$$f(x) = -e^{x-7} - 8$$

- A. $[a, \infty), a \in [2, 13]$
 - B. $(-\infty, a), a \in [-14, -1]$
 - C. $(a, \infty), a \in [2, 13]$
 - D. $(-\infty, a], a \in [-14, -1]$
 - E. $(-\infty, \infty)$
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4. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$4^{-4x-4} = 25^{-3x+5}$$

- A. $x \in [-10, -6]$
 - B. $x \in [0.19, 5.19]$
 - C. $x \in [-23.64, -19.64]$
 - D. $x \in [4.26, 6.26]$
 - E. There is no Real solution to the equation.
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5. Which of the following intervals describes the Range of the function below?

$$f(x) = \log_2(x + 4) + 8$$

- A. $[a, \infty), a \in [-4, 3]$
 - B. $[a, \infty), a \in [4, 6]$
 - C. $(-\infty, a), a \in [5, 9]$
 - D. $(-\infty, a), a \in [-10, -6]$
 - E. $(-\infty, \infty)$
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6. Solve the equation for x and choose the interval that contains x (if it exists).

$$13 = \sqrt[4]{\frac{21}{e^{9x}}}$$

- A. $x \in [-0.27, 0.3]$
 - B. $x \in [-6.32, -5.96]$
 - C. $x \in [0.46, 0.88]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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7. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_5(2x + 5) + 5 = 3$$

- A. $x \in [-7.48, 0.52]$
 - B. $x \in [-15.5, -9.5]$
 - C. $x \in [-27.5, -16.5]$
 - D. $x \in [60, 61]$
 - E. There is no Real solution to the equation.
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8. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$2^{3x-4} = 343^{4x+5}$$

- A. $x \in [-1.42, 0.58]$
 - B. $x \in [-3.5, -0.5]$
 - C. $x \in [-32.96, -29.96]$
 - D. $x \in [-12, -8]$
 - 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).

$$\log_5(-2x + 7) + 6 = 3$$

- A. $x \in [-1.5, 7.5]$
 - B. $x \in [114, 119]$
 - C. $x \in [-61, -55]$
 - D. $x \in [119, 129]$
 - E. There is no Real solution to the equation.
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10. Which of the following intervals describes the Range of the function below?

$$f(x) = -e^{x+6} - 7$$

- A. $(-\infty, a), a \in [-12, -4]$
 - B. $(-\infty, a], a \in [-12, -4]$
 - C. $[a, \infty), a \in [6, 11]$
 - D. $(a, \infty), a \in [6, 11]$
 - E. $(-\infty, \infty)$
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