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

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

  A. $[a, \infty), a \in [-2.6, -0.8]$

  B. $(-\infty, a), a \in [-0.4, 2.4]$

  C. $(a, \infty), a \in [-2.6, -0.8]$

  D. $(-\infty, a], a \in [-0.4, 2.4]$

  E. $(-\infty, \infty)$

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2. Solve the equation for x and choose the interval that contains x (if it exists).

$$16 = \ln \sqrt[7]{\frac{26}{e^{5x}}}$$

  A. $x \in [-5.75, -4.75]$

  B. $x \in [-5.53, -0.53]$

  C. $x \in [-23.75, -20.75]$

  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).

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

  A. $x \in [-108.4, -103.4]$

  B. $x \in [17.19, 21.19]$

  C. $x \in [-2.33, 0.67]$

  D. $x \in [-0.13, 7.87]$

  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).

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

A. $x \in [-1.2, 1.4]$

B. $x \in [0.8, 2.8]$

C. $x \in [10.4, 12.6]$

D. $x \in [2.6, 4.2]$

E. There is no Real solution to the equation.

5. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_5 (2x + 8) + 5 = 2$$

A. $x \in [-131.5, -124.5]$

B. $x \in [-119.5, -114.5]$

C. $x \in [5.5, 10.5]$

D. $x \in [-5, 1]$

E. There is no Real solution to the equation.

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

$$f(x) = e^{x+5} - 1$$

A. $(a, \infty), a \in [-6, 0]$

B. $(-\infty, a], a \in [1, 7]$

C. $(-\infty, a), a \in [1, 7]$

D. $[a, \infty), a \in [-6, 0]$

E. $(-\infty, \infty)$

7. Which of the following intervals describes the Domain of the function below?
$$f(x) = \log_2 (x + 4) - 9$$

  A. $(a, \infty), a \in [-4.4, -1]$

  B. $(-\infty, a), a \in [3.5, 4.7]$

  C. $(-\infty, a], a \in [6.5, 10]$

  D. $[a, \infty), a \in [-11.3, -7.8]$

  E. $(-\infty, \infty)$

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8. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_4 (4x + 6) + 6 = 2$$

  A. $x \in [60, 63.7]$

  B. $x \in [-2.9, -0.4]$

  C. $x \in [63.4, 67.3]$

  D. $x \in [2.4, 4.7]$

  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).
$$24 = \ln \sqrt[4]{\frac{5}{e^{9x}}}$$

  A. $x \in [-12.49, -8.49]$

  B. $x \in [-7.15, -3.15]$

  C. $x \in [-2.59, -0.59]$

  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?

$$f(x) = \log_2 (x + 7) - 9$$

A. $(-\infty, a), a \in [-9.04, -8.97]$

B. $[a, \infty), a \in [6.59, 8.25]$

C. $(-\infty, a), a \in [8.76, 10.3]$

D. $[a, \infty), a \in [-7.18, -6.9]$

E. $(-\infty, \infty)$