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

$$\log_5(-4x+7)+4=3$$

A. $x \in [-29.86, -29.04]$

B. $x \in [-2.02, -1.4]$

C. $x \in [1.91, 2.25]$

D. $x \in [1.33, 1.77]$

E. There is no Real solution to the equation.

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

$$22 = \ln \sqrt[7]{\frac{5}{e^{4x}}}$$

A. $x \in [34.1, 40.1]$

B. $x \in [-7.81, -0.81]$

C. $x \in [-10.6, -8.6]$

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 Domain of the function below?

$$f(x) = -e^{x+5} - 9$$

A. $(a, \infty), a \in [7, 12]$

B. $(-\infty, a], a \in [-13, -3]$

C. $[a, \infty), a \in [7, 12]$

D. $(-\infty, a), a \in [-13, -3]$

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

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

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

A. $(-\infty, a), a \in [-1, 0]$

B. $[a, \infty), a \in [1, 10]$

C. $(-\infty, a], a \in [-1, 0]$

D. $(a, \infty), a \in [1, 10]$

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

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

$$f(x) = -\log_2(x + 7) + 5$$

A. $(-\infty, a), a \in [-6.1, -2.4]$

B. $[a, \infty), a \in [-9.5, -5.9]$

C. $[a, \infty), a \in [5.4, 7.1]$

D. $(-\infty, a), a \in [4.3, 6.9]$

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

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

$$21 = \sqrt[5]{\frac{12}{e^{6x}}}$$

A. $x \in [0.5, 3]$

B. $x \in [-1.2, -0.4]$

C. $x \in [-18.5, -16.8]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$f(x) = -\log_2(x-9) + 1$$

A. $(-\infty, a), a \in [-0.6, 2.5]$

B. $[a, \infty), a \in [-9.6, -7.9]$

C. $[a, \infty), a \in [7.5, 10.4]$

D. $(-\infty, a), a \in [-1.8, -0.6]$

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

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

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

A. $x \in [-12.6, -10]$

B. $x \in [-0.4, 1.4]$

C. $x \in [-5.7, -2]$

D. $x \in [1.4, 2.4]$

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).

$$2^{-4x-5} = \left(\frac{1}{9}\right)^{2x-3}$$

A. $x \in [-1.8, -0.5]$

B. $x \in [4.7, 6.3]$

C. $x \in [0.3, 1.8]$

D. $x \in [-0.7, -0.2]$

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).

$$\log_4(4x+7)+5=3$$

A. $x \in [2.7, 6.2]$

B. $x \in [2, 3.9]$

C. $x \in [-2.4, -1.2]$

D. $x \in [13.9, 14.7]$

E. There is no Real solution to the equation.