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

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

A. $x \in [-9.9, -4.4]$

B. $x \in [-3.8, -0.6]$

C. $x \in [-0.4, 2.3]$

D. $x \in [-3.8, -0.6]$

E. There is no Real solution to the equation.

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

$$f(x) = e^{x+5} - 3$$

A. $[a, \infty), a \in [-4, -2]$

B. $(a, \infty), a \in [-4, -2]$

C. $(-\infty, a], a \in [2, 8]$

D. $(-\infty, a), a \in [2, 8]$

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

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

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

A. $[a, \infty), a \in [-4, 1]$

B. $(a, \infty), a \in [-9, -6]$

C. $(-\infty, a], a \in [-1, 5]$

D. $(-\infty, a), a \in [3, 12]$

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

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

$$5 = \ln \sqrt[7]{\frac{21}{e^{9x}}}$$

A. $x \in [-1.69, -1.16]$

B. $x \in [-0.88, -0.76]$

C. $x \in [-3.98, -3.29]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$f(x) = \log_2 (x - 8) + 5$$

A. $(-\infty, a), a \in [-6.1, -3.7]$

B. $[a, \infty), a \in [-10.8, -7.8]$

C. $(-\infty, a), a \in [3.7, 6.8]$

D. $[a, \infty), a \in [5.2, 11]$

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

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

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

A. $x \in [-4.1, 0.1]$

B. $x \in [1, 7]$

C. $x \in [1, 7]$

D. $x \in [6.2, 7.8]$

E. There is no Real solution to the equation.

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

$$5^{2x-4} = \left(\frac{1}{49}\right)^{4x+5}$$

A. $x \in [-0.3, 0.8]$

B. $x \in [3.7, 8]$

C. $x \in [-5.1, -3]$

D. $x \in [-2.7, 0.4]$

E. There is no Real solution to the equation.

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

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

A. $[a, \infty), a \in [4, 6]$

B. $(-\infty, a), a \in [-10, 0]$

C. $(-\infty, a], a \in [-10, 0]$

D. $(a, \infty), a \in [4, 6]$

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

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

$$15 = \ln \sqrt[4]{\frac{11}{e^{8x}}}$$

A. $x \in [-1.8, -1]$

B. $x \in [7.1, 7.7]$

C. $x \in [-5, -2.8]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$4^{3x-5} = 9^{2x+2}$$

A. $x \in [6, 8]$

B. $x \in [9.33, 12.33]$

C. $x \in [-48.08, -46.08]$

D. $x \in [-29.72, -28.72]$

E. There is no Real solution to the equation.