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

$$\log_4(3x+8)+4=2$$

A. $x \in [7, 11]$

B. $x \in [-2.33, 3.67]$

C. $x \in [-8.65, 1.35]$

D. $x \in [-2.33, 3.67]$

E. There is no Real solution to the equation.

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

$$f(x) = e^{x-9} - 3$$

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

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

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

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

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

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

$$7 = \ln \sqrt[4]{\frac{21}{e^{7x}}}$$

A. $x \in [-1.57, -1.55]$

B. $x \in [-1.55, -1.54]$

C. $x \in [-3.59, -3.56]$

D. There is no Real solution to the equation.

E. None of the above.

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

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

A. $x \in [-2.87, -0.87]$

B. $x \in [-1.67, 5.33]$

C. $x \in [-21.19, -18.19]$

D. $x \in [106.4, 110.4]$

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?

$$f(x) = \log_2(x+5) - 4$$

A. $[a, \infty), a \in [4.66, 5.26]$

B. $(-\infty, a), a \in [3.55, 4.05]$

C. $[a, \infty), a \in [-5.26, -4.94]$

D. $(-\infty, a), a \in [-4.79, -3.94]$

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

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

$$20 = \sqrt[4]{\frac{5}{e^{9x}}}$$

A. $x \in [-0.9, 0.7]$

B. $x \in [-9.2, -8.1]$

C. $x \in [-1.7, -0.5]$

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?

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

A. $[a, \infty), a \in [0.91, 1.22]$

B. $(-\infty, a), a \in [4.71, 5.43]$

C. $(-\infty, a), a \in [-5.65, -4.88]$

D. $[a, \infty), a \in [-2.05, 0.17]$

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

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

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

A. $x \in [-2.1, 0.3]$

B. $x \in [-2.7, -1.8]$

C. $x \in [-8.7, -7.4]$

D. $x \in [-6.5, -3.9]$

E. There is no Real solution to the equation.

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

$$f(x) = -e^{x+8} - 9$$

A. $(a, \infty), a \in [6, 12]$

B. $(-\infty, a], a \in [-9, -7]$

C. $(-\infty, a), a \in [-9, -7]$

D. $[a, \infty), a \in [6, 12]$

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

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

$$\log_4(-3x+5)+5=3$$

A. $x \in [-4.1, -2.1]$

B. $x \in [-8.5, -6]$

C. $x \in [-1.5, 4.2]$

D. $x \in [-22.6, -16.8]$

E. There is no Real solution to the equation.
