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

$$\log_5(3x+5)+4=3$$

A. $x \in [-1.64, -1.31]$

B. $x \in [-2.71, -1.68]$

C. $x \in [39.52, 40.03]$

D. $x \in [0.47, 1.36]$

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?

$$f(x) = -\log_2(x-4)+1$$

A. $(-\infty, a), a \in [-4.36, -2.94]$

B. $(a, \infty), a \in [2.71, 4.5]$

C. $(-\infty, a], a \in [-1.4, 0.74]$

D. $[a, \infty), a \in [0.3, 1.95]$

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

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

$$10 = \sqrt[3]{\frac{10}{e^{7x}}}$$

A. $x \in [-4.81, -4.53]$

B. $x \in [-0.67, -0.55]$

C. $x \in [-0.34, -0.15]$

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 x (if it exists).

$$6 = \ln \sqrt[5]{\frac{10}{e^{3x}}}$$

A. $x \in [8, 11.2]$

B. $x \in [-5.6, -3.6]$

C. $x \in [-3.6, -3]$

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?

$$f(x) = \log_2 (x - 2) - 4$$

A. $[a, \infty), a \in [1.2, 2.18]$

B. $(-\infty, a), a \in [2.95, 4.4]$

C. $(-\infty, a), a \in [-5.21, -3.64]$

D. $[a, \infty), a \in [-3.17, -0.87]$

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

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

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

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

B. $(-\infty, a), a \in [-15, -6]$

C. $(-\infty, a], a \in [-15, -6]$

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

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

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

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

A. $x \in [4.8, 7.8]$

B. $x \in [-1.3, 0.1]$

C. $x \in [14.1, 17.1]$

D. $x \in [-3.7, -1.4]$

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).

$$4^{5x-2} = \left(\frac{1}{27}\right)^{-2x-5}$$

A. $x \in [-1.43, 1.57]$

B. $x \in [-9.83, -6.83]$

C. $x \in [-0.25, 4.75]$

D. $x \in [51.66, 58.66]$

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).

$$\log_5 (2x + 7) + 5 = 3$$

A. $x \in [-18.5, -8.5]$

B. $x \in [58, 63]$

C. $x \in [-5.48, -0.48]$

D. $x \in [-21.5, -18.5]$

E. There is no Real solution to the equation.

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

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

A. $(a, \infty), a \in [-11, -4]$

B. $[a, \infty), a \in [-11, -4]$

C. $(-\infty, a), a \in [-1, 6]$

D. $(-\infty, a], a \in [-1, 6]$

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