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

$$f(x) = -\log_2(x+3) - 7$$

A. $[a, \infty), a \in [-6.3, -1.6]$

B. $(-\infty, a), a \in [4.4, 8.8]$

C. $[a, \infty), a \in [1.9, 3.5]$

D. $(-\infty, a), a \in [-7.3, -6.7]$

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

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

$$4^{-3x+5} = \left(\frac{1}{27}\right)^{3x+2}$$

A. $x \in [-1.7, -0.3]$

B. $x \in [-0.1, 1.7]$

C. $x \in [0.7, 3.1]$

D. $x \in [-4, -0.8]$

E. There is no Real solution to the equation.

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

$$8 = \ln \sqrt[5]{\frac{18}{e^{9x}}}$$

A. $x \in [4.08, 4.14]$

B. $x \in [-1.47, -1.45]$

C. $x \in [-1.51, -1.46]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$4^{4x-4} = \left(\frac{1}{25}\right)^{-2x+3}$$

A. $x \in [-8.84, -1.84]$

B. $x \in [-1.69, 0.31]$

C. $x \in [3.61, 6.61]$

D. $x \in [0.17, 2.17]$

E. There is no Real solution to the equation.

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

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

A. $[a, \infty), a \in [4.61, 6.47]$

B. $[a, \infty), a \in [-5.47, -4.32]$

C. $(-\infty, a), a \in [5.78, 8.19]$

D. $(-\infty, a), a \in [-7.35, -6.43]$

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

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

$$f(x) = e^{x+1} - 7$$

A. $(a, \infty), a \in [-7, -3]$

B. $[a, \infty), a \in [-7, -3]$

C. $(-\infty, a], a \in [5, 8]$

D. $(-\infty, a), a \in [5, 8]$

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

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

$$24 = \sqrt[5]{\frac{7}{e^{3x}}}$$

A. $x \in [-41.65, -38.65]$

B. $x \in [3.65, 7.65]$

C. $x \in [-3.47, -0.47]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$\log_5(4x + 5) + 6 = 2$$

A. $x \in [-2, 2.8]$

B. $x \in [1.9, 5.5]$

C. $x \in [-256, -252.8]$

D. $x \in [-259.4, -255.3]$

E. There is no Real solution to the equation.

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

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

A. $x \in [-8.7, -4.8]$

B. $x \in [2.1, 4.1]$

C. $x \in [-5.7, -0.6]$

D. $x \in [-5.7, -0.6]$

E. There is no Real solution to the equation.

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

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

A. $(a, \infty), a \in [5, 8]$

B. $[a, \infty), a \in [5, 8]$

C. $(-\infty, a], a \in [-5, 0]$

D. $(-\infty, a), a \in [-5, 0]$

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