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

$$f(x) = -\log_2(x-6) - 1$$

A. $[a, \infty), a \in [3.5, 7.7]$

B. $[a, \infty), a \in [-8.6, -4.1]$

C. $(-\infty, a), a \in [-1.5, -0.2]$

D. $(-\infty, a), a \in [0.9, 2.4]$

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

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

$$6 = \sqrt[7]{\frac{23}{e^{9x}}}$$

A. $x \in [-0.8, 2.2]$

B. $x \in [-2.8, -0.3]$

C. $x \in [-5.8, -4.6]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$\log_3(-2x+8) + 6 = 3$$

A. $x \in [-13, -8]$

B. $x \in [17, 24]$

C. $x \in [8, 13]$

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

E. There is no Real solution to the equation.

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

$$3^{5x+3} = 343^{4x-4}$$

A. $x \in [-4, 1]$

B. $x \in [-30, -26]$

C. $x \in [1, 3]$

D. $x \in [-10, -6]$

E. There is no Real solution to the equation.

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

$$f(x) = e^{x+2} + 3$$

A. $[a, \infty), a \in [-8, -1]$

B. $(a, \infty), a \in [-8, -1]$

C. $(-\infty, a), a \in [2, 5]$

D. $(-\infty, a], a \in [2, 5]$

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