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

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

A. $[a, \infty), a \in [2.23, 4.48]$

B. $(-\infty, a), a \in [-0.47, 1.92]$

C. $(-\infty, a), a \in [-2.57, -0.76]$

D. $[a, \infty), a \in [-4.12, -2.16]$

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

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

$$22 = \ln \sqrt[6]{\frac{14}{e^{5x}}}$$

A. $x \in [-29, -23]$

B. $x \in [-5, -2]$

C. $x \in [-9, -6]$

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).

$$\log_3(-4x+8) + 5 = 2$$

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

B. $x \in [1, 3.8]$

C. $x \in [6.7, 9.2]$

D. $x \in [4.2, 6.4]$

E. There is no Real solution to the equation.

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

$$f(x) = e^{x+7} + 6$$

A. $(-\infty, a], a \in [4, 7]$

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

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

D. $(-\infty, a), a \in [4, 7]$

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

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

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

A. $x \in [9, 12]$

B. $x \in [20, 25]$

C. $x \in [-9, -6]$

D. $x \in [-17, -12]$

E. There is no Real solution to the equation.
