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

$$f(x) = -e^{x-1} + 4$$

A. $[a, \infty), a \in [-12, 0]$

B. $(a, \infty), a \in [-12, 0]$

C. $(-\infty, a], a \in [3, 8]$

D. $(-\infty, a), a \in [3, 8]$

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

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

$$3^{5x-2} = 64^{3x+3}$$

A. $x \in [-5, -1]$

B. $x \in [1, 5]$

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

D. $x \in [6, 9]$

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).

$$11 = \sqrt[6]{\frac{14}{e^{9x}}}$$

A. $x \in [-0.95, -0.03]$

B. $x \in [-7.88, -6.75]$

C. $x \in [0.27, 1.62]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$f(x) = \log_2(x - 8) - 4$$

A. $(-\infty, a), a \in [-9.1, -5.8]$

B. $(a, \infty), a \in [4.9, 10.7]$

C. $(-\infty, a], a \in [1.3, 5.2]$

D. $[a, \infty), a \in [-4.4, -3.8]$

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

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

$$\log_5(-3x + 8) + 5 = 3$$

A. $x \in [13, 16]$

B. $x \in [-47, -34]$

C. $x \in [3, 11]$

D. $x \in [0, 7]$

E. There is no Real solution to the equation.
