1. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$3^{-5x-2} = 64^{-3x-5}$$

   A. $x \in [-2.7, -2.6]$

   B. $x \in [0.6, 2]$

   C. $x \in [8.8, 9.4]$

   D. $x \in [-0.6, 1.2]$

   E. There is no Real solution to the equation.

2. Which of the following intervals describes the Domain of the function below?
$$f(x) = -e^{x+5} - 6$$

   A. $(-\infty, a), a \in [-9, -1]$

   B. $(a, \infty), a \in [4, 8]$

   C. $[a, \infty), a \in [4, 8]$

   D. $(-\infty, a], a \in [-9, -1]$

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

3. Solve the equation for x and choose the interval that contains x (if it exists).
$$17 = \sqrt[6]{\frac{10}{e^{8x}}}$$

   A. $x \in [-13.8, -12.1]$

   B. $x \in [1.1, 2.2]$

   C. $x \in [-1.1, -0.2]$

   D. There is no Real solution to the equation.

   E. None of the above.

4. Which of the following intervals describes the Domain of the function below?
$$f(x) = -\log_2(x+7) + 7$$

A. $(-\infty, a], a \in [-10, -3]$

B. $[a, \infty), a \in [5, 10]$

C. $(a, \infty), a \in [-10, -3]$

D. $(-\infty, a), a \in [5, 10]$

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

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5. Which of the following intervals describes the Range of the function below?
$$f(x) = -\log_2(x+7) - 6$$

A. $(-\infty, a), a \in [5.29, 6.62]$

B. $[a, \infty), a \in [6.62, 7.25]$

C. $(-\infty, a), a \in [-6.63, -4.32]$

D. $[a, \infty), a \in [-8.65, -6.39]$

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

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6. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$5^{3x-5} = \left(\frac{1}{216}\right)^{2x-2}$$

A. $x \in [-0.6, 0.3]$

B. $x \in [18.4, 19.6]$

C. $x \in [2.9, 3.6]$

D. $x \in [0.9, 2.8]$

E. There is no Real solution to the equation.

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7. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_5\left(-4x + 7\right) + 5 = 3$$

   A. $x \in [-30.2, -25.6]$

   B. $x \in [0.7, 2]$

   C. $x \in [6.5, 10]$

   D. $x \in [4.9, 8.7]$

   E. There is no Real solution to the equation.

8. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_5\left(-4x + 5\right) + 5 = 2$$

   A. $x \in [-2.75, 2.25]$

   B. $x \in [60, 64]$

   C. $x \in [55.5, 61.5]$

   D. $x \in [-6, -1]$

   E. There is no Real solution to the equation.

9. Which of the following intervals describes the Domain of the function below?
$$f(x) = e^{x-2} + 1$$

   A. $(-\infty, a), a \in [0.6, 5]$

   B. $[a, \infty), a \in [-1.4, 0.2]$

   C. $(-\infty, a], a \in [0.6, 5]$

   D. $(a, \infty), a \in [-1.4, 0.2]$

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

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

$$25 = \ln \sqrt[6]{\frac{28}{e^{5x}}}$$

    A. $x \in [-11.33, -5.33]$

    B. $x \in [-6.53, -0.53]$

    C. $x \in [24.33, 32.33]$

    D. There is no Real solution to the equation.

    E. None of the above.