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

$$\log_2(4x+7)+6=2$$

A. $x \in [4.5, 6.04]$

B. $x \in [-1.55, 0.55]$

C. $x \in [1.68, 3.36]$

D. $x \in [-2.73, -1.72]$

E. There is no Real solution to the equation.

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

$$f(x)=\log_2(x+6)+6$$

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

B. $[a, \infty), a \in [-10, 1]$

C. $(-\infty, a), a \in [-10, 1]$

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

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

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

$$5=\sqrt[4]{\frac{7}{e^{7x}}}$$

A. $x \in [-3.17, -2.63]$

B. $x \in [-0.39, -0.1]$

C. $x \in [-1.09, -0.38]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$17 = \ln \sqrt[4]{\frac{6}{e^{6x}}}$$

A. $x \in [-9.37, -3.37]$

B. $x \in [-4.19, 0.81]$

C. $x \in [-13.03, -7.03]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$f(x) = \log_2 (x - 2) - 9$$

A. $(-\infty, a), a \in [-5, -1]$

B. $(a, \infty), a \in [0, 6]$

C. $(-\infty, a], a \in [8, 12]$

D. $[a, \infty), a \in [-11, -8]$

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

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

$$f(x) = e^{x-5} - 9$$

A. $(a, \infty), a \in [-9, -7]$

B. $(-\infty, a], a \in [5, 19]$

C. $[a, \infty), a \in [-9, -7]$

D. $(-\infty, a), a \in [5, 19]$

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

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

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

A. $x \in [0.38, 2.38]$

B. $x \in [-23.08, -21.08]$

C. $x \in [36.38, 41.38]$

D. $x \in [-3.67, 0.33]$

E. There is no Real solution to the equation.

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

$$2^{3x+2} = 27^{2x-4}$$

A. $x \in [-8.3, -5.3]$

B. $x \in [0.1, 2.2]$

C. $x \in [2.5, 4.1]$

D. $x \in [-15, -12.4]$

E. There is no Real solution to the equation.

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

$$\log_2(-2x + 8) + 5 = 3$$

A. $x \in [-7.2, -5]$

B. $x \in [2.8, 4.4]$

C. $x \in [-1.5, 0.7]$

D. $x \in [1.6, 3]$

E. There is no Real solution to the equation.

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

$$f(x) = e^{x-9} + 7$$

A. $(-\infty, a], a \in [-9, -2]$

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

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

D. $(-\infty, a), a \in [-9, -2]$

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