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

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

A. $x \in [-2.3, -1.1]$

B. $x \in [5.6, 6.6]$

C. $x \in [12.4, 16]$

D. $x \in [-4.8, -2.1]$

E. There is no Real solution to the equation.

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

$$5 = \sqrt[7]{\frac{20}{e^{8x}}}$$

A. $x \in [-0.4, 0.3]$

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

C. $x \in [-5.6, -4.6]$

D. There is no Real solution to the equation.

E. None of the above.

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

$$f(x) = \log_2(x - 5) - 3$$

A. $(-\infty, a), a \in [-7.3, -4]$

B. $[a, \infty), a \in [-3.1, -0.7]$

C. $(-\infty, a], a \in [-1.6, 3.6]$

D. $(a, \infty), a \in [4.9, 7.1]$

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

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

$$\log_2(3x + 6) + 6 = 3$$

A. $x \in [-2.38, -1.44]$

B. $x \in [0.43, 0.84]$

C. $x \in [0.97, 1.39]$

D. $x \in [4.93, 5.77]$

E. There is no Real solution to the equation.

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

$$f(x) = e^{x+1} + 2$$

A. $[a, \infty), a \in [1.8, 2.8]$

B. $(a, \infty), a \in [1.8, 2.8]$

C. $(-\infty, a), a \in [-4.1, 1.4]$

D. $(-\infty, a], a \in [-4.1, 1.4]$

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