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

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

A. $x \in [21.6, 24.2]$

B. $x \in [0.7, 3]$

C. $x \in [-0.1, 1]$

D. $x \in [6.2, 7.7]$

E. There is no Real solution to the equation.

---

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

$$f(x) = \log_2(x - 9) - 1$$

A. $[a, \infty), a \in [-1.9, 0.6]$

B. $(-\infty, a), a \in [-13, -7.6]$

C. $(-\infty, a], a \in [0.3, 2.6]$

D. $(a, \infty), a \in [8.9, 11]$

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

---

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

$$f(x) = -e^{x-2} + 3$$

A. $(-\infty, a], a \in [1, 11]$

B. $[a, \infty), a \in [-4, -2]$

C. $(a, \infty), a \in [-4, -2]$

D. $(-\infty, a), a \in [1, 11]$

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

---

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

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

A. $x \in [-2.48, 0.32]$

B. $x \in [1.54, 2.32]$

C. $x \in [-5.73, -3.56]$

D. $x \in [0.14, 0.38]$

E. There is no Real solution to the equation.

---

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

$$24 = \sqrt[3]{\frac{12}{e^{4x}}}$$

A. $x \in [-1.57, -0.64]$

B. $x \in [0.77, 2.07]$

C. $x \in [-19.42, -18.32]$

D. There is no Real solution to the equation.

E. None of the above.
