61. Find the inverse of the function below (if it exists). Then, evaluate the inverse at $x = -10$ and choose the interval the $f^{-1}(-10)$ belongs to.

$$f(x) = \sqrt[3]{3x+2}$$

A. $f^{-1}(-10) \in [-332.71, -331.15]$

B. $f^{-1}(-10) \in [330.97, 332.89]$

C. $f^{-1}(-10) \in [-335.14, -333.95]$

D. $f^{-1}(-10) \in [332.91, 334.36]$

E. The function is not invertible for all Real numbers.

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62. Choose the interval below that f composed with g at $x = -1$ is in.

$$f(x) = -x^3 - 3x^2 - 2x \text{ and } g(x) = -2x^3 - 4x^2 - 4x$$

A. $(f \circ g)(-1) \in [-2, 5]$

B. $(f \circ g)(-1) \in [-33, -29]$

C. $(f \circ g)(-1) \in [-11, -1]$

D. $(f \circ g)(-1) \in [-27, -21]$

E. It is not possible to compose the two functions.

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63. Add the following functions, then choose the domain of the resulting function from the list below.

$$f(x) = \frac{4}{4x-13} \text{ and } g(x) = \frac{4}{3x-20}$$

A. The domain is all Real numbers greater than or equal to $x = a,$ where $a \in [-6, 1]$

B. The domain is all Real numbers except $x = a,$ where $a \in [2, 7]$

C. The domain is all Real numbers less than or equal to $x = a,$ where $a \in [-9, -3]$

D. The domain is all Real numbers except $x = a$ and $x = b,$ where $a \in [1, 6]$ and $b \in [6, 11]$

E. The domain is all Real numbers.

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64. Find the inverse of the function below. Then, evaluate the inverse at $x = 9$ and choose the interval that $f^{-1}(9)$ belongs to.

$$f(x) = \ln(x-5) - 4$$

A. $f^{-1}(9) \in [1202597, 1202601]$

B. $f^{-1}(9) \in [152, 154]$

C. $f^{-1}(9) \in [442406, 442412]$

D. $f^{-1}(9) \in [442418, 442422]$

E. $f^{-1}(9) \in [44, 55]$

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65. Determine whether the function below is 1-1.

$$f(x) = 15x^2 - 142x + 280$$

A. No, because the range of the function is not $(-\infty, \infty)$.

B. No, because there is a y-value that goes to 2 different x-values.

C. No, because the domain of the function is not $(-\infty, \infty)$.

D. No, because there is an x-value that goes to 2 different y-values.

E. Yes, the function is 1-1.
