LESSON PRACTICE

Answer the question.

1. Draw the graph of $y = \frac{e^x}{3}$. Find the inverse function. Graph it.

2. Draw the graph of $y = 2e^x$. Find the inverse function. Graph it.

3. Solve for x.

A. $e^{2x + 1} = 1$

B. $2e^{3x} = e^0$

C. $0 = \ln(2x + 5)$

D. $\ln(x) + \ln(5) = 6$

4. Solve for x. (**Hint:** Substitute and factor.)

A. $e^{2x} - 5e^{x} = -6$

B. $2e^{2x} + 7e^{x} = 4$

LESSON PRACTICE

Answer the question.

1. Draw the graph of $y = e^{x+1}$. Find the inverse function. Graph it.

2. Draw the graph of $y = e^{\frac{x}{2}}$. Find the inverse function. Graph it.

3. Solve for x.

A. $e^{x + \ln(3)} = 2$

B. $e^{x+1} = e^{2x-2}$

C. $\ln(x^2 + 3x + 5) = \ln(1 - x)$

D. $\ln\left(\frac{x}{2}\right) = 3$

4. Solve for x.

A. $2\ln^2(x) + 3 = 7\ln(x)$

B. $e^{2x} = 2e^x$

LESSON PRACTICE

Answer the question.

1. Draw the graph of $y = 2x^2$. Find the inverse function. Graph it.

Solve for x.

2. $e^{4x} = e$

3. $\ln(3x - 1) = 1$

4. $e^{2x} - 7e^{x} + 10 = 0$

5. $\ln^2(x) = 2\ln(x)$

6. $e^{2x} - 3e^{x} + 2 = 0$

LESSON PRACTICE

Solve for x.

1. $e^{2x + 2} = 5$

2. $2e^{2x} + 5e^{x} = 3$

3. $\ln(x + 2) = 2$

4. $\ln(x + 1) + \ln(4) = 3$

5. Solve for x: $\ln(2x - 4) = 2$.

6. Draw the graph of $y = e^{3x}$. Find the inverse function. Graph it.

Circle your answer.

1. Simplify $\frac{\ln(9)}{2}$ =

   A. $\ln(4.5)$

   B. $\frac{1}{2}\ln(4.5)$

   C. $\ln(3)$

   D. cannot be simplified

2. Solve for x: $\ln(x) - \ln(4) = 2$.

   A. $\frac{1}{4}e^2$

   B. e^4

   C. e^2

   D. $4e^2$

3. $\ln\left(\frac{6}{3}\right)$ is the same as:

   A. 2
   B. $\ln(18)$
   C. $\ln(3)$
   D. $\ln(6) - \ln(3)$

4. Find the inverse function: $f(x) = \ln(x - 2)$.

   A. $f^{-1}(x) = \ln(x + 2)$
   B. $f^{-1}(x) = e^x + 2$
   C. $f^{-1}(x) = 2e^x - 2$
   D. $f^{-1}(x) = 2e^x$

5. Simplify $\ln\left(\sqrt{2}\right) + \ln\left(\sqrt{10}\right)$.

   A. $\ln\left(\sqrt{12}\right)$
   B. $\sqrt{20}$
   C. $\ln\left(2\sqrt{5}\right)$
   D. cannot be simplified

6. Solve for x: $\ln^2(x) - 5\ln(x) = -4$

A. $x = e, e^4$
B. $x = \ln(4), \ln(5)$
C. $x = e^5, e$
D. $x = \ln(4), e$

7. e^X and $\ln(x)$ are inverse functions. The graph of $y = \ln(x)$ is the reflection of the graph of $y = e^x$ around the:

A. x-axis
B. y-axis
C. origin
D. line $y = x$

8. Solve for x: $e^{2x} = 3e^x$

A. $x = e^x - 3$
B. $x = \ln(3)$
C. $x = \ln(3)$ and $x = 0$
D. $x = 0$

9. Solve for x: $\ln(2) + \ln(x) = 7$

A. $x = \frac{e^2}{7}$

B. $x = 7e^2$

C. $x = 2e^7$

D. $x = \frac{e^7}{2}$

10. Solve for x: $e^{3x-1} = 1$

A. $\frac{1}{3}$

B. $-\frac{1}{3}$

C. 3

D. e^3