Algebra II Practice F.LE.A.4: Exponential Equations

NAME:_____

1. Solve for x to the nearest hundredth:
   $3.34^x = 27$
   [A] 1.43   [B] 2.73   [C] 0.52   [D] 0.37

2. Solve for x to the nearest hundredth:
   $5.11^x = 23$
   [A] 1.36   [B] 1.92   [C] 0.71   [D] 0.52

3. Solve for x to the nearest hundredth:
   $5.92^x = 21$
   [A] 1.32   [B] 1.71   [C] 0.77   [D] 0.58

4. Solve for x to the nearest hundredth:
   $3.06^x = 39$
   [A] 3.28   [B] 0.49   [C] 1.59   [D] 0.31

Solve:

5. $125^{5x+3} = 25$

6. $27^{8x+3} = 9$

7. $25^{5x+2} = 125$

8. $9^{7x+9} = 27$

9. Compare the quantity in Column A with the quantity in Column B.

Column A	Column B
x, when $10^{4x} = 52$	y, when $4^{3y} = 100$

   [A] The quantity in Column A is greater.

   [B] The quantity in Column B is greater.

   [C] The two quantities are equal.

   [D] The relationship cannot be determined on the basis of the information supplied.

10. Find x if $e^{5.1x} = 5$, and you are given $\ln 5 = 1.6094$.

    [A] 0.3156   [B] 3.1688

    [C] 1.0200   [D] 0.1961

11. Find x if $e^{9.5x} = 3$, and you are given $\ln 3 = 1.0986$.

   [A] 3.1667   [B] 0.1156

   [C] 0.1053   [D] 8.6473

16. Solve $114 = 6e^{0.095t}$. Round your answer to the nearest hundredth.

17. Solve $39 = 3e^{0.08t}$. Round your answer to the nearest hundredth.

12. Find x if $e^{5.3x} = 2$, and you are given $\ln 2 = 0.6931$.

   [A] 2.6500   [B] 0.1887

   [C] 7.6463   [D] 0.1308

18. Solve $99 = 9e^{0.04t}$. Round your answer to the nearest hundredth.

13. Solve for x correct to four decimal places:
   $e^{-4x} = 7.5$

19. Solve $e^{2x} + 5 = 8$ using a graphing calculator.

14. Solve for x correct to four decimal places:
   $e^{-7x} = 5$

20. Compare the quantity in Column A with the quantity in Column B.

Column A	Column B
x, when $e^x = 15$	e^e

   [A] The quantity in Column A is greater.

   [B] The quantity in Column B is greater.

15. Solve for x correct to four decimal places:
   $e^{-6x} = 7.8$

   [C] The two quantities are equal.

   [D] The relationship cannot be determined on the basis of the information supplied.

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[1] B

[2] B

[3] B

[4] A

[5] $-\dfrac{7}{15}$

[6] $-\dfrac{7}{24}$

[7] $-\dfrac{1}{10}$

[8] $-\dfrac{15}{14}$

[9] B

[10] A

[11] B

[12] D

[13] −0.5037

[14] −0.2299

[15] −0.3424

[16] 30.99

[17] 32.06

[18] 59.95

[19] 0.549

[20] B