Pre Calculus--SHOW ALL WORK Name_____ ID: 1

HW 3.4 Solving Exponential and Log Equations

Date_____ Period____

Solve each equation using SAME BASES method.

1) $4^{2-x} = 4^{x+2}$

2) $625^{3n-3} = 5^{3}$

3) $2^{-3a} = 2^{6}$

4) $25^{-2n-2} = 125$

Solve each equation using the CHANGE FROM EXPONENTIAL TO LOG FORM method. Round your answers to the nearest ten-thousandth.

5) $17^{x} = 32.8$

6) $9^{x-1} = 76$

7) $10^{-n} + 4 = 59$

8) $-4 \cdot 20^{a+4} = -31$

Solve each equation using TAKING LOG OF BOTH SIDES method. Round to three decimal places.

9) $5^{2x+3} = 3^{x-1}$

10) $7^{2x+1} = 3^{x+2}$

Solve the exponential equation BY FACTORING method.

11) $e^{2x} - 3e^{x} + 2 = 0$

12) $e^{2x} - 2e^{x} - 3 = 0$

Solve each equation by CHANGING TO EXPONENTIAL FORM.

13) $\log_2 (m - 9) = 1$

14) $\log_5 (k + 9) = 0$

15) $\log_3 4v = -1$

16) $\log (m - 3) = -1$

Solve each equation using CHANGING TO EXPONENTIAL FORM.

17) $10 + \log_{12} 3x = 11$

18) $7 \log_4 (v + 2) = 7$

Solve each equation using LOG PROPERTIES. Round to three decimal places.

19) $\log_3 (x^2 + 5) - \log_3 7 = 1$

20) $\log_3 7 - \log_3 2x = 4$

21) $\log_8 4 + \log_8 -x = \log_8 41$

22) $\log_3 -3x + \log_3 5 = 2$

23) $\log_8 x + \log_8 (x + 10) = \log_8 56$

24) $\log_3 5x - \log_3 5 = 2$

Answers to HW 3.4 Solving Exponential and Log Equations (ID: 1)

1) $\{0\}$

2) $\left\{\frac{5}{4}\right\}$

3) $\{-2\}$

4) $\left\{-\frac{7}{4}\right\}$

5) 1.232

6) 2.971

7) −1.7404

8) −3.3165

9) -2.80

10)

11) 0.69

12)

13) $\{11\}$

14) $\{-8\}$

15) $\left\{\frac{1}{12}\right\}$

16) $\left\{\frac{31}{10}\right\}$

17) $\{4\}$

18) $\{2\}$

19) $\{4, -4\}$

20) $\{0.0432\}$

21) $\{-10.25\}$

22) $\{-0.6\}$

23) $\{4\}$

24) $\{9\}$