

Course Recap/end of semester

-Unit 6 Test

-Unit 7 Quiz

-Unit 7 Test

-Finals (with a test replacement)

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Finding the Inverse ①

Of An Exponential Function

1. Switch x and y
2. Solve for the base
3. Convert to a log
4. Solve for y

5. Place y^{-1} for y

Example 1 $y = 2^{x-3} + 4$

Example 2 $y = 3 \cdot 2^{2x-1}$

$$x = 3 \cdot 2^{2y-1}$$

$$\frac{x}{3} = 2^{2y-1}$$

$$\log_2\left(\frac{x}{3}\right) = 2y - 1$$

$$\frac{\log_2\left(\frac{x}{3}\right) + 1}{2} = y$$

$$\frac{\log_2\left(\frac{x}{3}\right) + 1}{2} = y^{-1}$$

$$\frac{1}{2} \log_2\left(\frac{x}{3}\right) + \frac{1}{2} = y^{-1}$$

$$x = 2^{y-3} + 4$$

$$x - 4 = 2^{y-3}$$

$$\log_2(x - 4) = y - 3$$

$$\log_2(x - 4) + 3 = y^{-1}$$

Finding the Inverse

Of A Logarithmic Function

1. Switch x and y
2. Solve for the log
3. Convert to exponential
4. Solve for y

Example 3 $y = \log_3(x-2)$

Example 4 $y = 6 \ln 3x + 4$

$$X = 6 \ln 3y + 4$$

$$\begin{array}{r} x \\ -4 \\ \hline \end{array} = \begin{array}{r} 6 \ln(3y) + 4 \\ -4 \\ \hline \end{array}$$

$$\frac{x-4}{6} = \frac{6 \ln(3y)}{6}$$

$$- \frac{x-4}{6} = \ln(3y)$$

$$\textcircled{1} y = \log_3(x-2)$$

$$x = \log_3(y-2)$$

$$3^x = y-2$$

$$\begin{array}{r} +2 \\ \hline \end{array} \quad \begin{array}{r} +2 \\ \hline \end{array}$$

$$3^x + 2 = y^{-1}$$

$$\frac{e^{\frac{x-4}{6}}}{3} = \frac{3y}{3}$$

$$\frac{1}{3} e^{\frac{x-4}{6}} = y^{-1}$$