Algebra 2 w/ Trig

4.4 Evaluate Logarithms and Graph Logarithmic Functions

Warm-Up:

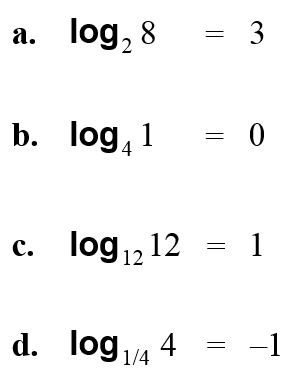
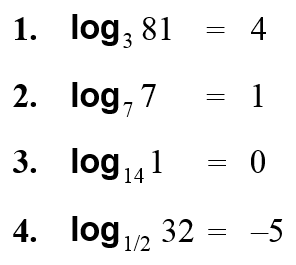
1. Find the inverse of the function *y* = 3*x* – 5.

2. An account that pays 3% annual interest compounded continuously has a balance of $10,000 on June 1, 2008.  
 If no money is added, what is the balance on June 1, 2010?

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Example 1: Rewrite Logarithmic Equations YOU TRY: **Rewrite the equation in exponential form.**

**Logarithmic Form Exponential Form Logarithmic Form Exponential Form**



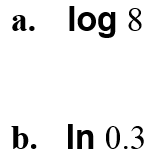
Example 2: Evaluate Logarithms

**Evaluate the logarithm.**

Example 3: Evaluate Common and Natural Logarithms

**Expression Keystrokes Display Check**



Example 4: Evaluate a Logarithmic Model

**The wind speed** *s***(in miles per hour) near the center of a tornado can be modeled by**



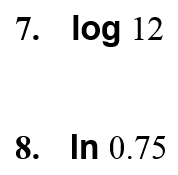
**where** *d***is the distance (in miles) that the tornado travels. In** 1925**, a tornado traveled** 220 **miles through three states. Estimate the wind speed near the tornado’s center.**

YOU TRY:

**Evaluate the logarithm. By hand!**

**Expression Display Check**



9. **WHAT IF? Use the function in Example** 4 **to estimate the wind speed near a tornado’s center if its path is** 150 **miles long.**

Example 5: Use Inverse Properties

**Simplify the expression.**



YOU TRY:

**Simplify the expression.**

Hw: Section 4.4 p. 255 #3-6, 8-36 even

4.4 Day 2

Warm-Up:





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Example 6: Find Inverse Functions

**Find the inverse of the function.**



YOU TRY:





Example 7: Graph Logarithmic Functions

**Graph the function.**

Example 8: Translate a Logarithmic Graph





YOU TRY:

**Graph the function. State the domain and range.**





KEEP GOING

**Evaluate the logarithm without using a calculator.**

1. log10 100
2. log8 64
3. log3 9
4. log7 7
5. log2 8
6. log4 64

Hw: Section 4.4 p. 255 #37-57 odd (Use graph paper)