

*Objectives:

*Logarithm

**The functions $y = b^x$ and $y = \log_b x$ are inverses.

Got It? 1. What is the logarithmic form of each equation?

a. $36 = 6^2$

b. $\frac{8}{27} = \left(\frac{2}{3}\right)^3$

c. $1 = 3^0$

Got It? 2. What is the value of each logarithm?

a. $\log_5 125$

b. $\log_4 32$

c. $\log_{64} \frac{1}{32}$

*common logarithm:

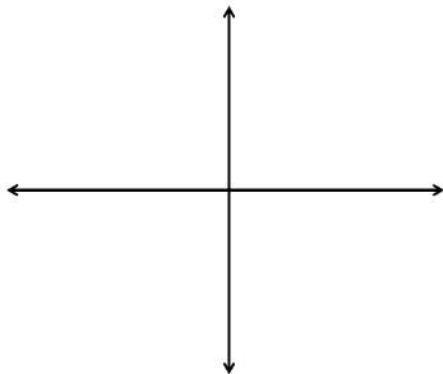
*The Richter Scale (number line p. 453)

Got It? 3. In 1995, an earthquake in Mexico registered 8.0 on the Richter scale. In 2001, an earthquake of magnitude 6.8 shook Washington state. How many times more intense was the 1995 earthquake than the 2001 earthquake?

$$\log \frac{I_1}{I_2} = M_1 - M_2$$

*Graph of exponential and logarithmic functions (p. 454)

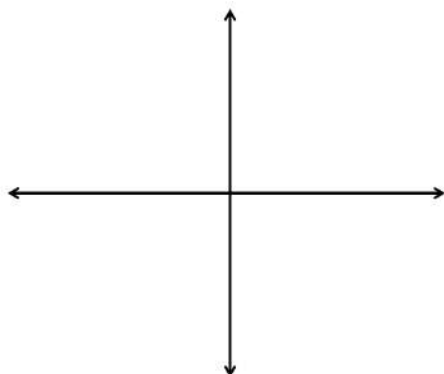
Got It? 4. a. What is the graph of $y = \log_4 x$? Describe the domain, range, y-intercept and asymptotes.



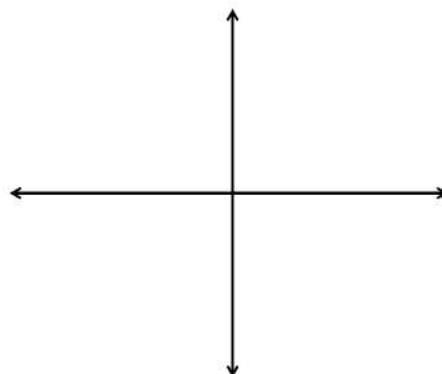
*Families of Logarithmic Functions

Got It? 5. How does the graph of each function compare to the graph of the parent function?

a. $y = \log_2(x - 3) + 4$



b. $y = 5 \log_2 x$



Inclass: p. 456 #24, 30, 34, 42

Homework: p. 456 #13-43(odd), not #37 or 39

Interactmath: #12, 15, 19, 21, 23, 25, 27, 31, 32, 34, 40