

Logarithms

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1. What is a number whose logarithm is 7? What is a number whose logarithm is -4 ?
2. If the logarithm of a number x is $1/3$, compute the logarithms of the following numbers:
 - (a) $10x$
 - (b) $100x$
 - (c) x^2
 - (d) $x/1000$
 - (e) $100/x$
 - (f) \sqrt{x}
3. Check that $2^3 < 10 < 2^4$. Why does that show that $\log 2$ is between $1/4$ and $1/3$? Which is bigger, 2^{10} or 1000 ? What does that tell you about the value of $\log 2$?
4. Use the approximate values $\log 2 \approx .301$ and $\log 3 \approx .477$ to find approximate values for $\log 4$, $\log 5$, $\log 6$, $\log 8$, and $\log 9$. Estimate $\log 48$ and $\log 50$, and use these estimates to estimate $\log 49$ and then $\log 7$.