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3450:222-005

Exponential and inverse functions

Spring 2007

Please write your name on the **top line** above. Then work on the problems below with two other students. Show your work, and use complete sentences in all your explanations.

1. Let $f(x) = 2^x$ and $g(x) = x^2$. Which is a polynomial, and which is an exponential function? Briefly explain.

2. Graph the exponential function $y = f(x) = a^x$, $a > 1$. Label the axes and the y -intercept. Calculate $\lim_{x \rightarrow \infty} a^x$ and $\lim_{x \rightarrow -\infty} a^x$. Does your graph illustrate exponential growth, exponential decay, or neither?

3. Repeat Problem (2) for $0 < a < 1$.

(OVER)

