ESP Quiz 10 (Kouba)

Please PRINT your name here : _____

This quiz is due next Thursday, December 9, 2004, at the beginning of ESP. It is OPTIONAL and can be used to remove an absence or deficient quiz score if you get a score of 75% or better. You can also do it for fun.

1.) (15 pts. each) Evaluate the following limits. Make proper use of limit notation.

a.) $\lim_{x \to 0} \dfrac{x2^x}{2^x - 1}$

b.) $\lim_{x \to 0} \left(\dfrac{1}{\sin x} - \dfrac{1}{x} \right)$

2.) (15 pts.) Solve $f'(x) = 0$ for x and set up a sign chart for f'. :
$f(x) = \sqrt{3} \cdot \arcsin x - \ln x$

3.) (15 pts.) Let $f(x) = \ln(x^2 + 4) - x \cdot \arctan(x/2)$. Find $y' = dy/dx$. SIMPLIFY YOUR ANSWER.