AP Calculus AB Mr. Shubleka Quiz: 1

Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~10 minutes

1. Expand the logarithms in terms of sums, differences, and multiples of simpler logarithms

(a) $\log(10x\sqrt{x-3})$ (b) $\ln \dfrac{x^2 \sin^3 x}{\sqrt{x^2+1}}$

2. Sketch a graph of a function. State the domain and range.

$$f(x) = 1 - e^{-x+1}$$

① $\log 10 + \log x + \log \sqrt{x-3}$

a) $= 1 + \log x + \frac{1}{2}\log(x-3)$

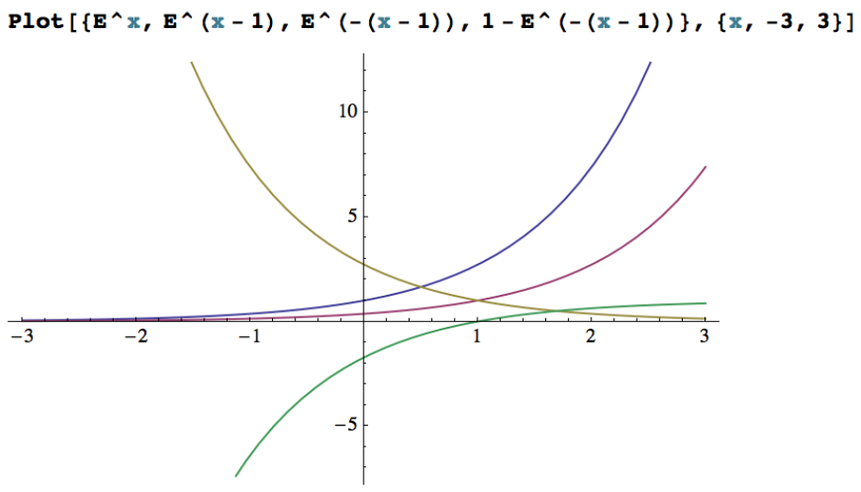
b) $\ln x^2 + \ln \sin^3 x - \ln (x^2+1)^{1/2} =$

$= 2\ln x + 3\ln[\sin x] - \frac{1}{2}\ln(x^2+1)$

1

② $y = 1 - e^{-x+1} = 1 - e^{-(x-1)}$

$e^{x} \Rightarrow e^{-x}$



Order of Transformations:
Blue: Exponential Function (e^x)
Red: 1 unit shift to the right
Beige: Reflection about x = 1 (vertical "axis")
Green: Reflection about the x-axis, and 1 unit shift upward.