Quiz 5 **Calculus 1** **7/26/04**

Each problem is worth 5 points. For full credit provide proper justification for your answer.

1. Find the indefinite integral $\int\left(x+\frac{1}{\sqrt{x}}\right)dx$. $= \int x^1 + x^{-1/2} = \frac{x^2}{2} + \frac{2x^{1/2}}{1} + C =$

$\frac{x^2}{2} + 2x^{1/2} + C$ Great!

that is your antiderivative for $x+\frac{1}{\sqrt{x}}$ you add a (C) because it asked for the indefinite integral. Yes

2. Evaluate $\int_1^2 \frac{1+y^2}{y}dy$ exactly. $\int \frac{1+y^2}{y} = \int y + \frac{1}{y}$ ∴ $F(x) = \frac{1}{2}y^2 + \ln y$ (No C necessary)

$\left(\frac{y^{1+1}}{1+1} + \ln y\right)$

$\int_1^2 \frac{1+y^2}{y} = \frac{1}{2}y^2 + \ln y \Big|_1^2$

$= \left[\frac{1}{2}(2)^2 + \ln 2\right] - \left[\frac{1}{2}(1)^2 + \ln 1\right]$

Besides, we wouldn't be able to determine which C-value is correct, anyway and the C-value doesn't change the derivative Right

Excellent $= 2 + \ln 2 - \frac{1}{2} + 0$

$= 1\frac{1}{2} + \ln 2 \approx 2.19$.