Quiz 2 **Calculus 2** **1/18/2008**

Each problem is worth 5 points. Clear and complete justification is required for full credit.

1. Evaluate $\int \frac{(\ln x)^3}{x}\,dx$.

let $\ln x = u$

$\rightarrow \frac{du}{dx} = \frac{1}{x} \rightarrow dx = x\,du$

$= \int \frac{u^3}{x} x\,du$

$= \int u^3\,du = \frac{1}{4}u^4 + C$

$= \frac{1}{4}(\ln x)^4 + C$

Great

2. Evaluate $\int \frac{x}{\sqrt[4]{x+2}}\,dx$.

let $u = x+2$

$\frac{du}{dx} = 1$

$dx = du$

$\int \frac{x}{u^{1/4}}\,du$

$\int \frac{u-2}{u^{1/4}}\,du$

$\int (u-2)(u^{-1/4})\,du$

$\int (-2u^{-1/4} + u^{3/4})\,du$

$-\frac{8}{3}u^{3/4} + \frac{4}{7}u^{7/4} + C$

Using: $u = x+2$

Solve for x

$u-2 = x$

$-\frac{8}{3}(x+2)^{3/4} + \frac{4}{7}(x+2)^{7/4} + C$

Excellent!