Quiz 6 Calculus 1 10/2/2002

Each problem is worth 5 points. Show complete justification for full credit.

5 1. Differentiate $y = (6t^2+5)^3(t^3-7)^4$.

$f(x)$ $g(x)$

$[(6t^2+5)^3]' \cdot (t^3-7)^4 + (6t^2+5)^3 [(t^3-7)^4]'$

$[3(6t^2+5)^2 \cdot 12t] \cdot (t^3-7)^4 + (6t^2+5)^3 \cdot [4(t^3-7)^3 \cdot 3t^2]$

5 2. Differentiate $y = \sqrt{x+\sqrt{x}}$.

$y = (x + x^{1/2})^{1/2}$

$y' = \frac{d}{dx}(x+x^{1/2})^{1/2} = 1/2(x+x^{1/2})^{-1/2} \frac{d}{dx}(x+x^{1/2})$

$= 1/2(x+x^{1/2})^{-1/2}(1 + 1/2 x^{-1/2})$