MAT 136 (Calculus I), November 8 Quiz, Prof. Jim Swift

No notes, no computers. Do your own work. Name: boy

Answers with a sentence, as in $f'(x) = \cdots$ or complete the sentence after the equal sign. Do *not* use the product or quotient rule. (For example, re-write $x\sqrt{x}$ as $x^{3/2}$. before differentiating.)

1. Find the derivative of $f(x) = x^2 - 3x + 2$.

$f'(x) = 2x - 3$

2. $\frac{d}{dx}\left[x(1+x^2+x^3)\right] = \frac{d}{dx}\left[x + x^3 + x^4\right] = 1 + 3x^2 + 4x^3$

Product rule is Not needed!

3. Find the derivative of $f(x) = 7x^{-5}$

$f'(x) = -35x^{-6}$

4. Find the derivative of $f(x) = \frac{\sqrt{x}+x^2}{x} = x^{-1}\left(x^{\frac{1}{2}} + x^2\right) = x^{-\frac{1}{2}} + x^1 = x^{-\frac{1}{2}} + x$

$f'(x) = -\frac{1}{2}x^{-\frac{3}{2}} + 1$

Quotient Rule is NOT needed!