CALCULUS
Chain Rule problems
NEW

0380-1. NEW Write $e^{\tan x}$ as a composite $f(g(x))$.

State explicitly what the function f is, and what the expression $g(x)$ is.

0380-2. NEW Compute $\dfrac{d}{dx}\left[e^{\tan x}\right]$.

0380-3. NEW Write $\tan(e^x)$ as a composite $f(g(x))$.

State explicitly what the function f is, and what the expression $g(x)$ is.

0380-4. NEW Compute $\dfrac{d}{dx}\left[\tan(e^x)\right]$.

0380-5. NEW Compute $\dfrac{d}{dx}\left[\left(-\pi x^4 + ex + \sqrt{2}\right)^{775}\right]$.

0380-6. NEW Compute $\dfrac{d}{dx}\left[\sqrt[5]{-\sqrt{\pi}x^3 + 2x^2 + 1}\right]$.

0380-7. NEW Compute $\dfrac{d}{dx}\left[(4x^2 - 1)^{25}(2x^3 - \pi)^{52}\right]$.

0380-8. NEW Compute $\dfrac{d}{dx}\left[\sec\left(4x^{14} - 2x^9 + \sqrt{e}\right)\right]$.

NEW 0380-9. Compute $\dfrac{d}{dx}\left[e^{(4x+8)(\csc x)}\right]$.

NEW 0380-10. Compute $\dfrac{d}{dx}\left[e^{\sec(\pi x+e)}\right]$.

NEW 0380-11. Compute $\dfrac{d}{dx}\left[\tan^2\left(\sin\left(x^8\right)\right)\right]$.

NEW 0380-12. Compute $\dfrac{d}{dx}\left[\sin\left(\sqrt[6]{\cos\left(\csc\left(4-x^5\right)\right)}\right)\right]$.

0380-13. NEW Suppose $f(5) = 1$, $f'(5) = -2$, $g(3) = 5$ and $g'(3) = 6$. Let $h(x) = f(g(x))$.

a. Compute $h(3)$.

b. Compute $h'(3)$.

0380-14. NEW Let $f : \mathbb{R} \to \mathbb{R}$ be a differentiable function.

a. Compute $\dfrac{d}{dx}\left[\sec\left(f(x)\right)\right]$.

b. Compute $\dfrac{d}{dx}\left[f\left(\sec x\right)\right]$.

c. Compute $\dfrac{d}{dx}\left[f\left(e^{-2x}\right)\right]$.

d. Compute $\dfrac{d}{dx}\left[e^{-2[f(x)]}\right]$.