

CALCULUS
Chain Rule problems
NEW

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

NEW

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

0380-2. Compute $\frac{d}{dx} [e^{\sin x}]$.

NEW

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

NEW

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

0380-4. Compute $\frac{d}{dx} [\sin(e^x)]$.

NEW

NEW 0380-5. Compute $\frac{d}{dx} \left[\left(-x^7 - 4x^5 + 1 \right)^{475} \right]$.

NEW 0380-6. Compute $\frac{d}{dx} \left[\sqrt[9]{x^4 - x^3 - 4x + 8} \right]$.

NEW 0380-7. Compute $\frac{d}{dx} \left[(3x^2 + 4)^{38} (3x^3 - x)^{151} \right]$.

NEW 0380-8. Compute $\frac{d}{dx} \left[\tan \left(2x^{26} + 8x^{24} - e \right) \right]$.

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

NEW 0380-10. Compute $\frac{d}{dx} \left[e^{\cot(3\pi x/2)} \right]$.

NEW 0380-11. Compute $\frac{d}{dx} \left[\cos^2 \left(\csc \left(x^4 \right) \right) \right]$.

NEW 0380-12. Compute $\frac{d}{dx} \left[\cos \left(\sqrt[7]{\tan \left(\cot \left(x^3 + 1 \right) \right)} \right) \right]$.

0380-13. Suppose $f(4) = 2$, $f'(4) = 3$,
 $g(1) = 4$ and $g'(1) = 5$.
Let $h(x) = f(g(x))$.

- a. Compute $h(1)$. b. Compute $h'(1)$.

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

a. Compute $\frac{d}{dx} [\cot (f(x))]$.

b. Compute $\frac{d}{dx} [f (\cot x)]$.

c. Compute $\frac{d}{dx} [f (e^{-x})]$.

d. Compute $\frac{d}{dx} [e^{-[f(x)]}]$.