

Day 32 is Thursday, April 4, 2013

Two unfortunate common mistakes on Exam 3

[1],[2] Finding derivatives of $f(x) = xe^{(x)}$

Common mistakes:

$$f'(x) = (1)e^{(x)}$$

not using product rule

$$\text{or } f'(x) = x(x)e^{(x-1)}$$

not using product rule
and using wrong rule for
derivative of $e^{(x)}$

[4] involving derivatives of function including term $\frac{x^4}{12}$

$$f(x) = \frac{x^4}{12} + \text{stuff}$$

many of you rewrite f in strange ways

$$f(x) = 12x^4 + \text{stuff}$$

$$\text{or } f(x) = 12^{-4x} \quad \text{or } 12x^{-4} \quad \text{or something}$$

Correct approach: $f(x) = (\frac{1}{12}) \cdot x^4 + \text{stuff}$

Continuing Section 6-2 Substitution

Another Basic Example 6-2#10 (similar to #9)

Find the Indefinite Integral $\int \frac{1}{5x-7} (5) dx$.

Solution

Name things: the integrand is $f(x) = \frac{1}{5x-7} (5)$

We need to find $F(x) = \int \frac{1}{5x-7} (5) dx$

Step (1) It is hard to spot the inner function u because the integrand is not written with parentheses around the inner function. More helpful would be to rewrite the integrand

$$f(x) = \frac{1}{5x-7} (5) = \frac{1}{(5x-7)} (5) = \frac{5}{(5x-7)}$$

bad
better
best

So $u = 5x-7$ = inner function

