

Answer on Question #47031, Math, Differential Calculus

If $y = x^5 \cdot e^x$, differentiate with respect to x

a) $x^x \cdot e^x$

b) $x^4 \cdot e^x(x - 5)$

c) x^{4x}

d) $x^4 \cdot e^x(x + 5)$

Solution:

$$y' = (x^5 \cdot e^x)' = (x^5)' \cdot e^x + x^5 \cdot (e^x)' = 5x^4e^x + x^5e^x = x^4e^x(5 + x)$$

Answer: d) $x^4 \cdot e^x(x + 5)$

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