

Find the derivative of $f(x)=e^{5x}$

1) You have to use the chain rule. Copy e^{5x} exactly, and then multiply by the derivative of $5x$.

$$f(x) = e^{5x}$$

1) copy e^{5x}

2) multiply by the derivative of $5x$

which is $\frac{d}{dx} 5x = 5$

$$f'(x) = e^{5x} (5)$$

3) Rewrite by placing 5 in front

$$f'(x) = 5e^{5x}$$