

3255

$$\begin{aligned}f(x) &= 3 \cdot e^{ax} \\f'(x) &= 3a \cdot e^{ax} \\f'(0) &= 3a \cdot e^{a \cdot 0} \\&= 3a \cdot e^0\end{aligned}$$

$$e^0 = 1$$

$$f'(0) = 3a$$

$$f'(0) = 6$$

$$6 = 3a$$

$$a = 2$$

$$y = 5 \cdot 2^{3x}$$

$$= 5 \cdot 2^{3x} \ln 2 \cdot 3$$

$$= 15 \ln 2 \cdot 2^{3x}$$

$$y = a^{kx}$$

$$y' = a^{kx} \ln a \cdot k$$