



(1)  $e^{kt \ln 8}$

(2)  $\frac{1}{x \ln 4}$

(3)  $x^x(\ln x + 1)$

$$\begin{aligned}\ln y &= \ln x^x \\ &= x \ln x \\ \frac{1}{y} \frac{dy}{dx} &= \ln x + x(1/x) \\ \frac{dy}{dx} &= y(\ln x + 1) \\ \frac{dy}{dx} &= x^x(\ln x + 1)\end{aligned}$$

(4) **39**

$$E(p) = -\frac{pD'(p)}{D(p)} = -\frac{p(-3)}{200-3p} = \frac{(65)(3)}{200-3(65)} = 39$$