

4.22  
1.8

(4)

$$\left. \begin{aligned} f' &= 1 \\ f' &= 2e^{2x} - e^x \end{aligned} \right\}$$

$$2e^{2x} - e^x = 1$$

$$e^x = t$$

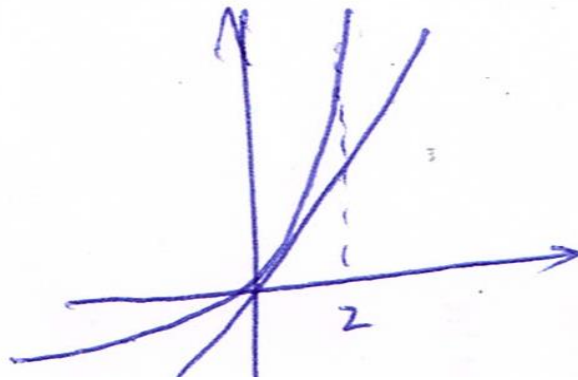
$$2t^2 - t - 1 = 0$$

$$t = 1$$

$$t = -\frac{1}{2}$$

$$\boxed{x \leq 0}$$

~~$x > 0$~~



$$\int_0^2 (e^{2x} - e^x - x) dx = \left. \frac{1}{2}e^{2x} - e^x - \frac{x^2}{2} \right|_0^2 = \frac{1}{2}e^4 - e^2 - 2 - \frac{1}{2} + 1 = \frac{1}{2}e^4 - e^2 - \frac{3}{2}$$