

$$6) z = ax + b$$

$$z = -0,0030x + 6,8578$$

$$7) z = -0,0030x + 6,8578 = \ln y$$

$$y = e^{-0,0030x} \times e^{6,8578}$$

$$y = ke^{-kx} = 951 e^{-0,0030x}$$

$$8) 951 e^{-0,0030 \times 400} = 286,436$$

Exercice 2:

$$1) \lim_{x \rightarrow +\infty} f(x) = e^{2x} + e^x - x - 2$$

$$x \rightarrow +\infty = e^x \left(e^x + 1 - \frac{x}{e^x} - \frac{2}{e^x} \right)$$

$$\text{donc } \lim_{x \rightarrow +\infty} e^x = +\infty$$

$$\text{et } \lim_{x \rightarrow +\infty} \frac{x}{e^x} = +\infty \left(\lim_{x \rightarrow +\infty} x = +\infty \text{ et } \lim_{x \rightarrow +\infty} e^x = +\infty \right)$$

$$\text{et } \lim_{x \rightarrow +\infty} \frac{2}{e^x} = 0 \left(\lim_{x \rightarrow +\infty} 2 = 2, \lim_{x \rightarrow +\infty} e^x = +\infty \right)$$

$$\text{Donc } \lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$2) \lim_{x \rightarrow -\infty} f(x) = +\infty \quad f(x) = e^{2x} e^x + 1 - x - 2$$

$\lim_{x \rightarrow -\infty} e^{2x} = 0 \quad \lim_{x \rightarrow -\infty} e^x = 0 \quad \lim_{x \rightarrow -\infty} 1 = 1 \quad \lim_{x \rightarrow -\infty} -x = +\infty \quad \lim_{x \rightarrow -\infty} -2 = -2$

$$3) e^{2x} + e^x - x - 2 = (-x - 2)$$

$$= e^{2x} + e^x$$

$$\lim_{x \rightarrow +\infty} e^{2x} + e^x = +\infty \quad \lim_{x \rightarrow +\infty} e^{2x} + e^x = 0$$

Pour $-x-2$ est asymptote oblique en $-\infty$