Ex 2

m.à.s

1. isoler l'exponentielle
2. $\log_a$
3. isoler x et calculer

a) $10 + 3 \cdot 5^{-2x} = 61$

$3 \cdot 5^{-2x} = 51$

$5^{-2x} = \frac{51}{3}$

$-2x = \log_5\left(\frac{51}{3}\right)$

$x = \frac{\log_5(51/3)}{-2} \left(= \frac{\frac{\log(51/3)}{\log(5)}}{-2} \right.$

$\left. = \frac{\log(51/3)}{-2\log(5)} \right) \cong -0{,}880$

e) $11e^{3x-1} = 1$

$$e^{3x-1} = \frac{1}{11} \quad \Big| \ \ln(\ )$$

$$3x-1 = \ln\left(\frac{1}{11}\right)$$

$$3x = \ln\left(\frac{1}{11}\right)+1$$

$$x = \frac{\ln(1/11)+1}{3} \cong -0{,}466$$

c) $3+e^{4x} = 15$

$$e^{4x} = 12$$

$$4x = \ln(12)$$

$$x = \frac{\ln(12)}{4} \cong 0{,}621$$

f1 $e^{2x} - e^x - 2 = 0$

chgmt de variable $e^x = y$

$y^2 - y - 2 = 0$

$(y-2)(y+1) = 0$

$y = \begin{cases} 2 \\ -1 \end{cases}$

$2 \iff e^x = 2 \iff x = \ln(2) \simeq 0{,}693$

$-1 \iff \underbrace{e^x}_{>0} = -1$ ↯ impossible