01) $T(x) = 100 \cdot e^{-2x} - e^{2x}$

a) $T(0) = 100 \cdot e^{-2 \cdot 0} - e^{2 \cdot 0}$
$T(0) = 100 \cdot 1 - 1$
$T(0) = 99\ ^{o}C$

b) $T(x) = 100 \cdot e^{-2x} - e^{2x}$
$0 = 100 \cdot e^{-2x} - e^{2x}$
$100 \cdot e^{-2x} = e^{2x}$
$100 = \dfrac{e^{2x}}{e^{-2x}}$
$e^{4x} = 100$
$\ln e^{4x} = \ln 100$
$4x = 4{,}6$
$x = 1{,}15\ m$

02) $A\left(\frac{1}{2}, \frac{6}{5}\right)$
$B\left(\frac{3}{2}, \frac{-4}{5}\right)$

$m_{\overline{AB}} = \dfrac{y_B - y_A}{x_B - x_A}$

$m_{\overline{AB}} = \dfrac{\frac{-4}{5} - \frac{6}{5}}{\frac{3}{2} - \frac{1}{2}}$

$m_{\overline{AB}} = \dfrac{\frac{-10}{5}}{\frac{2}{2}} = \dfrac{-2}{1} = -2$

$m_{\overline{AB}} = -2$

P(–5, 2)
m = –2

$y - y_0 = m(x - x_0)$
$y - 2 = -2(x - (-5))$
$y - 2 = -2(x + 5)$
$y - 2 = -2x - 10$
$y = -2x - 8$

03) EM DESENVOLVIMENTO

04) a) $F_e = P$
$K \cdot x = m \cdot g$
$K \cdot 0{,}05 = 0{,}5 \cdot 10$
$K = \dfrac{5}{0{,}05}$
$K = 100\ N/m$

b) $P_{ap} = P - E$
$P_{ap} = m \cdot g - \mu_L \cdot g \cdot V$
$P_{ap} = 0{,}5 \cdot 10 - 1 \cdot 10^3 \cdot 10 \cdot 4 \cdot 10^{-4}$
$P_{ap} = 5 - 4$
$P_{ap} = 1\ N$

c) $E = P$
$\mu_L \cdot g \cdot \dfrac{V_c}{2} = m \cdot g$
$\mu_L \cdot \dfrac{V_c}{2} = \mu_c \cdot V_c$
$\mu_L = 2\mu_c$
$\mu_L = 2 \cdot \dfrac{500}{400}$
$\mu_L = 2{,}5\ g/cm^3$

05) a) Fenol, éter

b) $1s^2\ 2s^2\ 2p^6$

c) 1, 2, 3, 4, 5, 6

d) 7, 8, 9

06) a) ácido decanoico

b) éster

c) ácido caprílico