$f(x) = 0$
$0 = 2 \cdot ((lnx)^2 - 1)$
$1 = (lnx)^2$
$\pm 1 = lnx$
$e^{\pm 1} = e^{lnx}$
$x_1 = e^1 = e$
$x_2 = e^{-1}$

$f'(x) = \frac{4}{x} \cdot lnx$
$f'(x) = 0$
$lnx = 1 \rightarrow x = 1$
$f'(0,5) \approx 8 \cdot -0,69 < 0$
$f'(4) \approx 1 \cdot ln(4) > 0$
$f(1) = 2 \cdot (0^2 - 1) = -2 \Rightarrow T(1|-2)$

b) $f'(x) = 4x^{-1} \cdot lnx = -4x^{-2} \cdot lnx + \frac{4}{x} \cdot \frac{1}{x} = -\frac{4}{x^2} lnx + \frac{4}{x^2} = \frac{4}{x^2} \cdot (-lnx + 1)$
$0 = f''(x)$
$0 = \frac{4}{x^2} \cdot (-lnx + 1)$
$0 = -lnx + 1$
$1 = lnx \rightarrow x = e$
$f''(1) = 4 \cdot 1 > 0$ $f''(4) = \frac{1}{4} \cdot (-ln(4) + 1) < 0$
$f(e) = 2 \cdot ((lne)^2 - 1) = 2 \cdot (1^2 - 1) = 0 \rightarrow W(e|0)$
$f'(e) = \frac{4}{e}$
$0 = \frac{4}{e} \cdot e + t$ | -4
$t = -4 \Rightarrow t(x) = \frac{4}{e} \cdot x - 4$