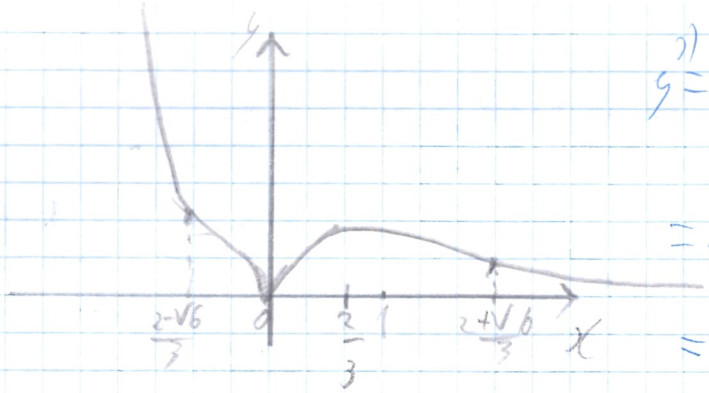

$y' = -(-e^{-x}\cdot(x^{\frac{2}{3}} - \frac{2}{3}x^{-\frac{1}{3}}) + e^{-x}(\frac{2}{3\sqrt[3]{x}} - \frac{2}{9\sqrt[3]{x^2}}) =$

$= e^{-x}(x^{\frac{2}{3}} - \frac{2}{3}x^{-\frac{1}{3}} - \frac{2}{3\sqrt[3]{x}} + \frac{2}{9\sqrt[3]{x^2}}) =$

$= e^{-x}\,\frac{9x^2-12x-2}{9x\sqrt[3]{x}}.$

y не существует при $x=0$. $y'=0 \Rightarrow 9x^2-12x-2=0$. $\frac{D}{4} = 6^2+2\cdot 9 = 54$. $x = \frac{6\pm 3\sqrt{6}}{9} = \frac{2\pm\sqrt{6}}{3}$.

y' знаки: $+$ на $(-\infty; \frac{2-\sqrt{6}}{3})$, $-$ на $(\frac{2-\sqrt{6}}{3}; 0)$ и $(0; \frac{2+\sqrt{6}}{3})$, $+$ на $(\frac{2+\sqrt{6}}{3}; +\infty)$

$y' < 0$ при $\left[\begin{array}{l} \frac{2-\sqrt{6}}{3} < x < 0 \\ 0 < x < \frac{2+\sqrt{6}}{3} \end{array}\right.$

$y' > 0$ при $\left[\begin{array}{l} x < \frac{2-\sqrt{6}}{3} \\ x > \frac{2+\sqrt{6}}{3} \end{array}\right.$