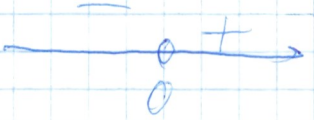
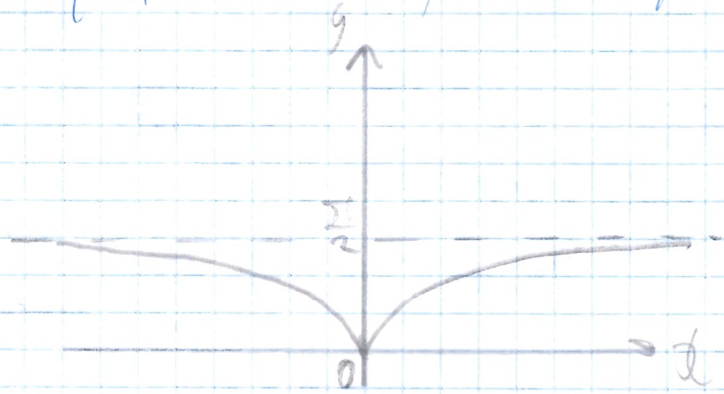
$$y' = -\frac{1}{\sqrt{1-\frac{1}{ch^2x}}} \cdot \left(-\frac{1}{ch^2x}\right) \cdot sh x = \frac{sh x}{ch^2 x \sqrt{1-\frac{1}{ch^2x}}} = \frac{sh x}{ch x \sqrt{sh^2 x}} =$$

$$= \frac{sh x}{ch x \cdot |sh x|}$$

y' не сущ. при $x=0$.





y'. при $x>0$. $(x \neq 0)$

$$y' = -\frac{1}{ch^2 x} \cdot sh x = -\frac{sh x}{ch^2 x}$$

при $x<0$:

$$y' = -\left(-\frac{1}{ch^2 x} \cdot sh x\right) = \frac{sh x}{ch^2 x}$$

$y' < 0$ при $\left[\begin{array}{l} x<0 \\ x>0 \end{array}\right.$.

1040. $x = \sin^2 t$, $y = \cos^2 t$.

$$y'_x = \frac{2\cos t \cdot (-\sin t)}{2\sin t \cdot \cos t} = -1$$

1041. $x = a\cos t$, $y = b\sin t$.

$$y'_x = \frac{b\cos t}{-a\sin t} = -\frac{b}{a} ctg\, t.$$

1044. $x = a(t - \sin t)$, $y = a(1 - \cos t)$

$$y'_x = \frac{a\sin t}{a - a\cos t} = \frac{\sin t}{1 - \cos t}$$

1049. $y^2 = 2px$

$$2y \cdot y'_x = 2p \qquad y'_x = \frac{p}{y}.$$

1050. $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

$$\frac{2x}{a^2} + \frac{2y \cdot y'_x}{b^2} = 0 \qquad y'_x = -\frac{b^2}{a^2} \cdot \frac{x}{y}.$$