1054. $\sqrt{x}+\sqrt{y}=\sqrt{a}$

$\frac{1}{2\sqrt{x}}+\frac{1}{2\sqrt{y}}\cdot y'_x=0 \quad y'_x=-\sqrt{\frac{y}{x}}$.

1077. $y=\frac{x^4}{(1+x)^3}$ $\quad x\neq -1$ $\quad y=0 \Rightarrow x=0$.

$\lim\limits_{x\to -1+0}\frac{x^4}{(1+x)^3}=+\infty$; $\lim\limits_{x\to -1-0}\frac{x^4}{(1+x)^3}=-\infty$.

$\frac{x^4}{(1+x)^3}=\frac{x^4}{x^3+3x^2+3x+1}=x-3+\frac{6x^2+8x+3}{x^3+3x^2+3x+1}=x-3+\frac{6+\frac{8}{x}+\frac{3}{x^2}}{x+3+\frac{3}{x}+\frac{1}{x^2}}$. при $x\to\infty$

$y=x-3$

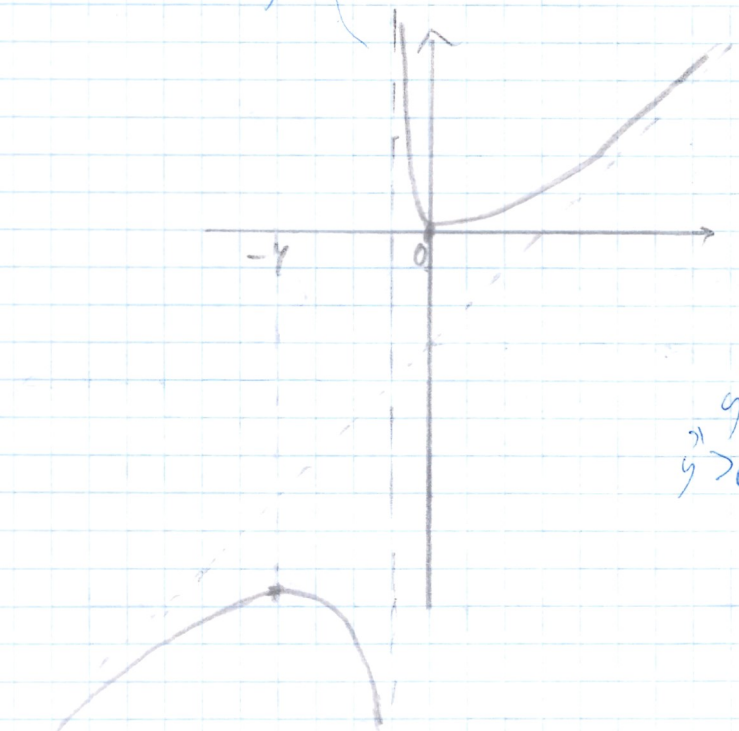
(наклонная асимптота)

$y'=\frac{4x^3(1+x)^3-3(1+x)^2x^4}{(1+x)^6}=\frac{4x^3(x+1)-3x^4}{(1+x)^4}=$

$=\frac{x^4+4x^3}{(1+x)^4}=\frac{x^3(x+4)}{(1+x)^4}$. y' не сущ. при $x=-1$. $y'=0$ при $x=0, x=-4$.

$y'>0$ при $\left[\begin{array}{l}x<-4\\x>0\end{array}\right.$; $y'<0$ при $\left[\begin{array}{l}-4<x<-1\\-1<x<0\end{array}\right.$.

$y(-4)=\frac{256}{-3^3}=-9\frac{13}{27}$.



$y''=\frac{(4x^3+12x^2)(1+x)^4-4(1+x)^3(x^4+4x^3)}{(1+x)^8}=$

$=\frac{(4x^3+12x^2)(x+1)-4(x^4+4x^3)}{(x+1)^5}=\frac{12x^2}{(x+1)^5}$

y'' не сущ. при $x=-1$.

$y''=0$ при $x=0$

$y''>0$ при $x\Rightarrow\left[\begin{array}{l}-1<x<0\\x>0\end{array}\right.$; $y''<0$ при $x<$