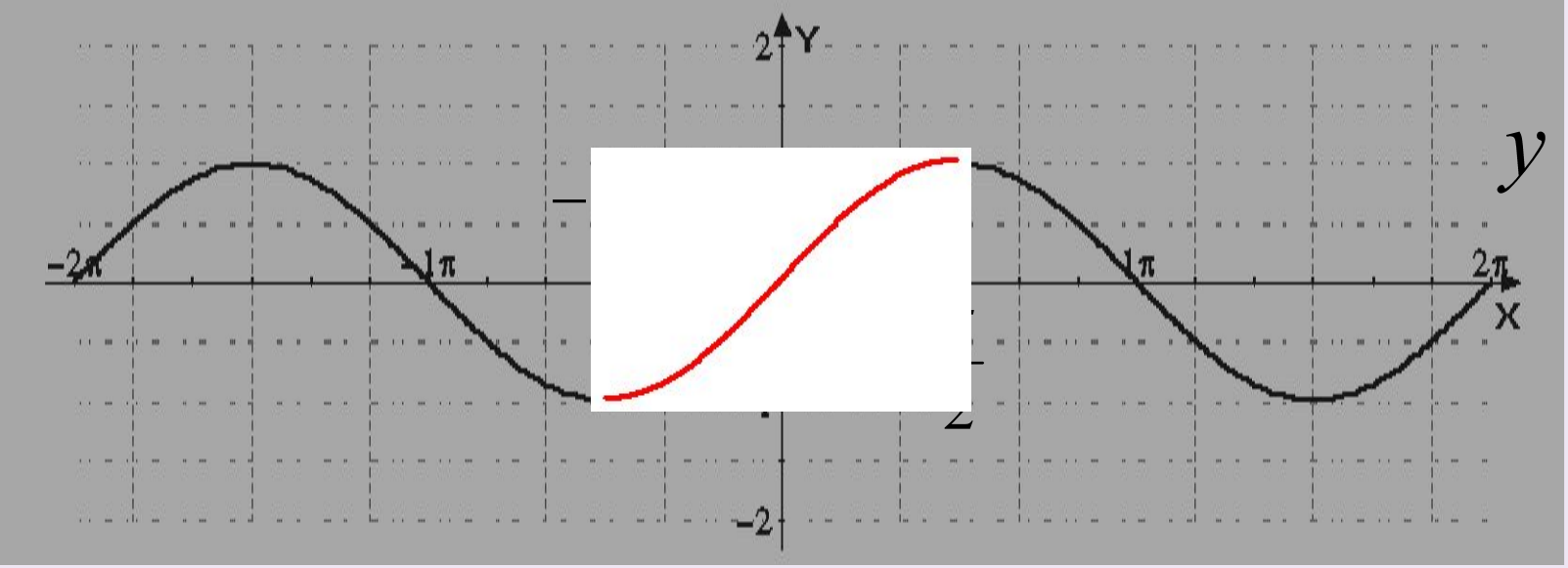
Муниципальное
Общеобразовательное Учреждение
«Средняя Общеобразовательная
Школа №236 г.Знаменск»

# ОБРАТНЫЕ ТРИГОНОМЕТРИЧЕСКИЕ ФУНКЦИИ

*Учитель математики Потапова Е.А.*




$y = \sin x$

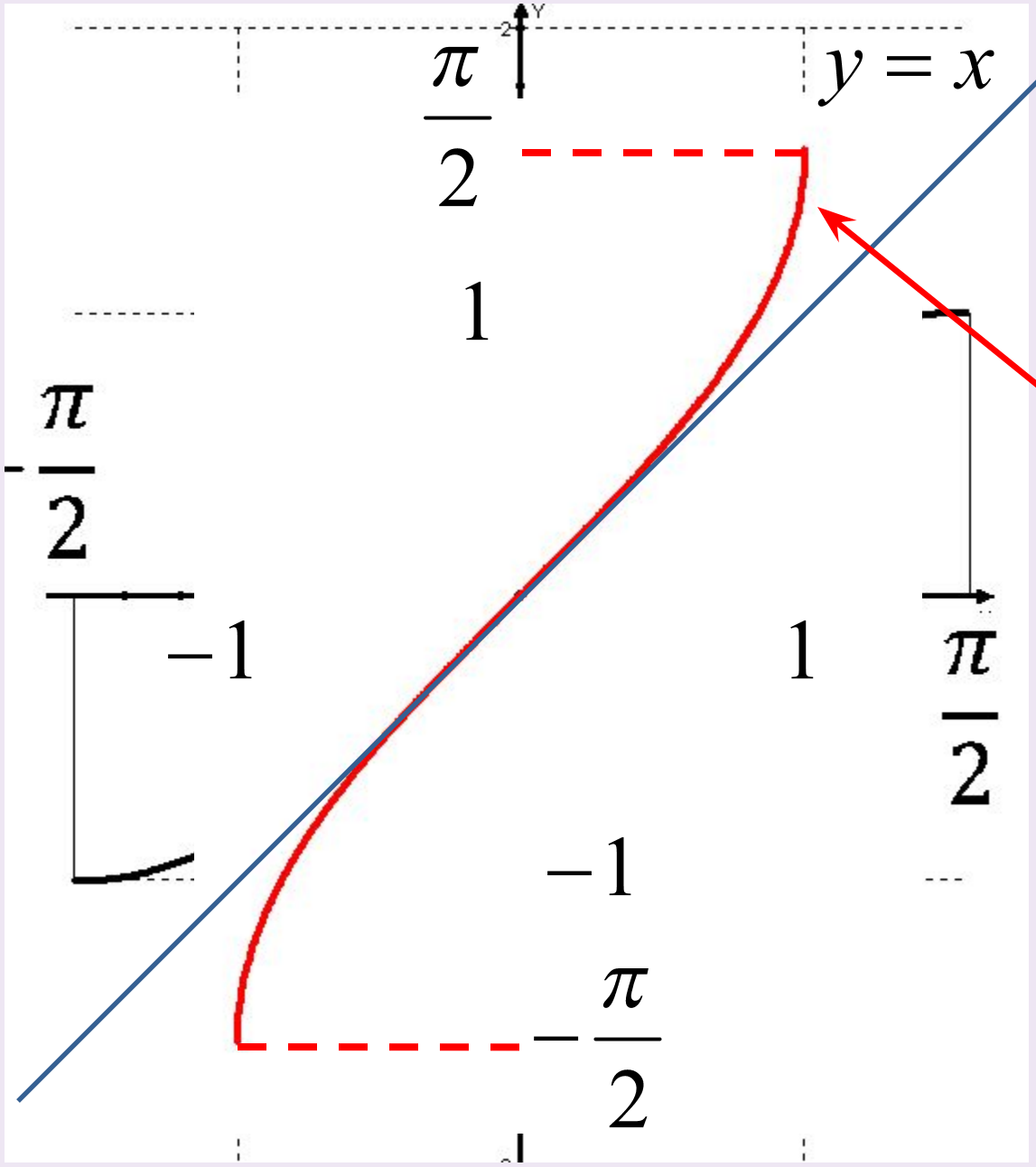
$D(y) = (-\infty;\infty),\ E(y) = [-1;1].$

*Ðàññìîòðèì ôóíêöèþ* $y = \sin x$,

*åñëè* $x \in [-\frac{\pi}{2};\frac{\pi}{2}]$,

*òîãäà ôóíêöèÿ âîçðàñòàåò ,*

*çíà÷èò ñóùåñòâóåò åé îáðàòíàÿ .*




$y = \sin x$

*Âûðàçèì õ*

$x = \arcsin y$

*ïåðåîáîçíà ÷èì*

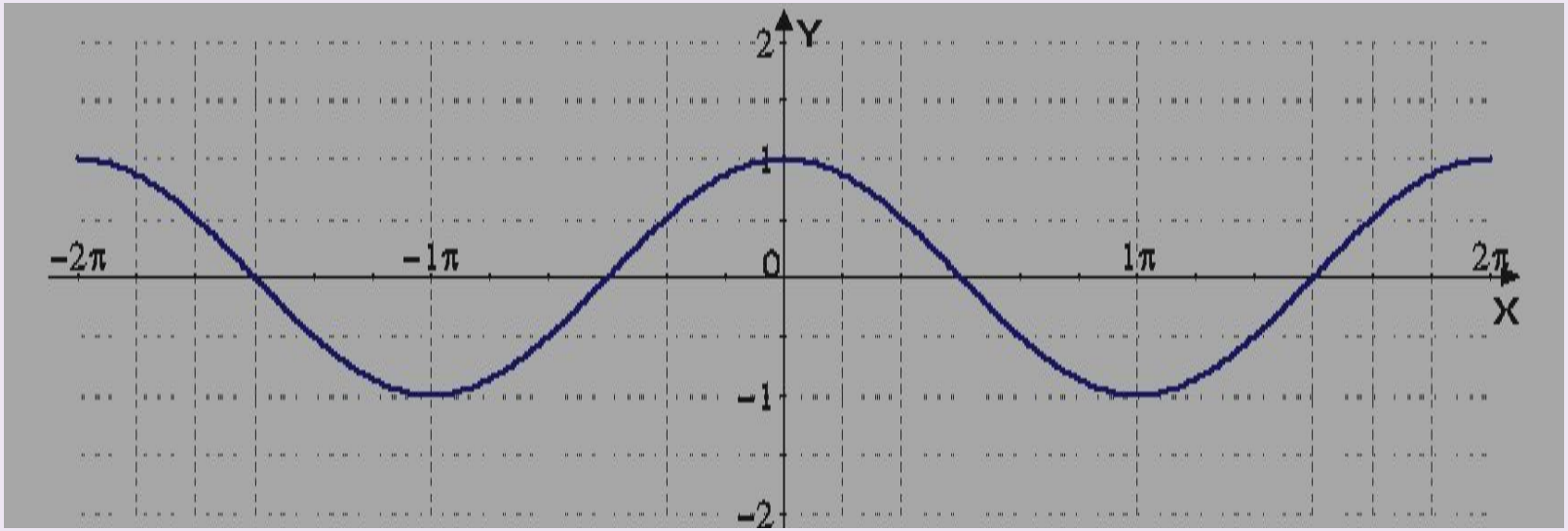
*õ è ó.*

*ïîëó÷èì ôóíêöèþ*

$y = \arcsin x$

$D(y) = [-1;1]$

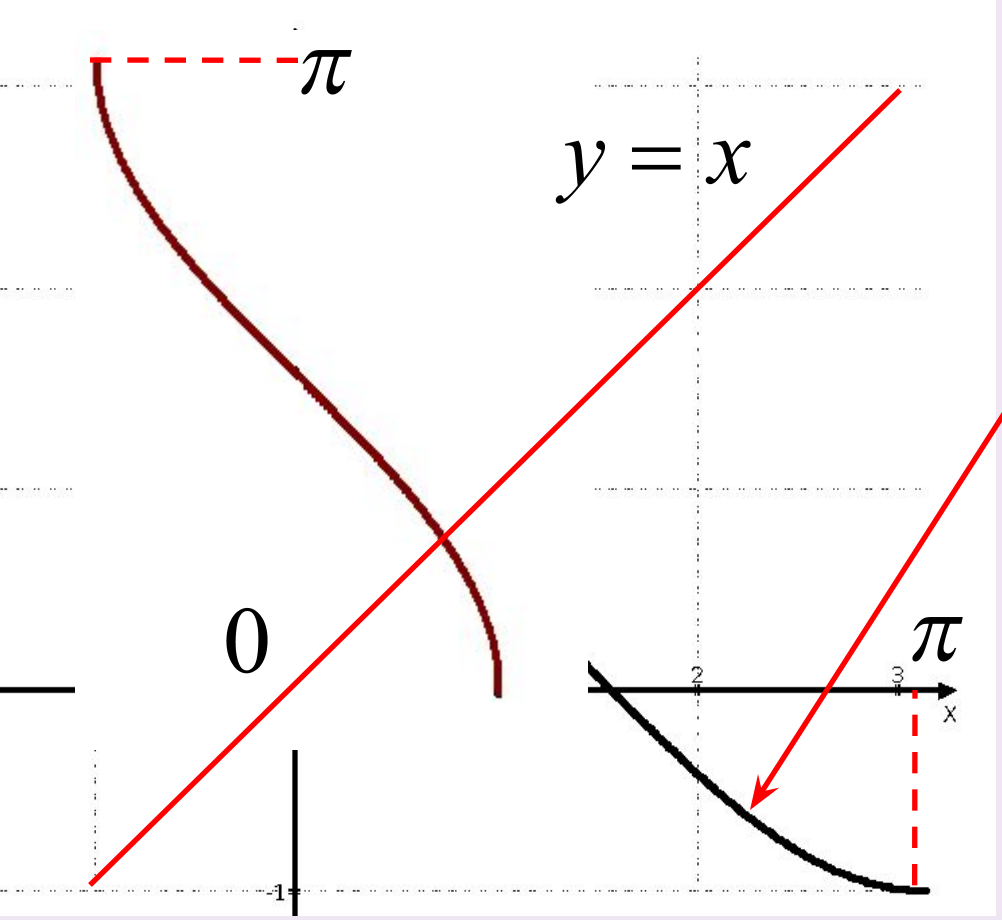
$E(y) = [-\frac{\pi}{2};\frac{\pi}{2}]$




$$y = \cos x$$

$$D(y) = (-\infty; \infty)$$

$$E(y) = [-1;1]$$




Âûáåðåì ïðîèçâîëüíóþ ,

íà êîîðäèíàòíîé ïëîñêîñòè

y = cosx ïîñòðîèì .

Ðàññìîòðèì

$y = \cos x$

íà ïðîìåæóòêå $[0;\pi]$

$E(y) = [-1;1]$

Âûðàçèì $x$

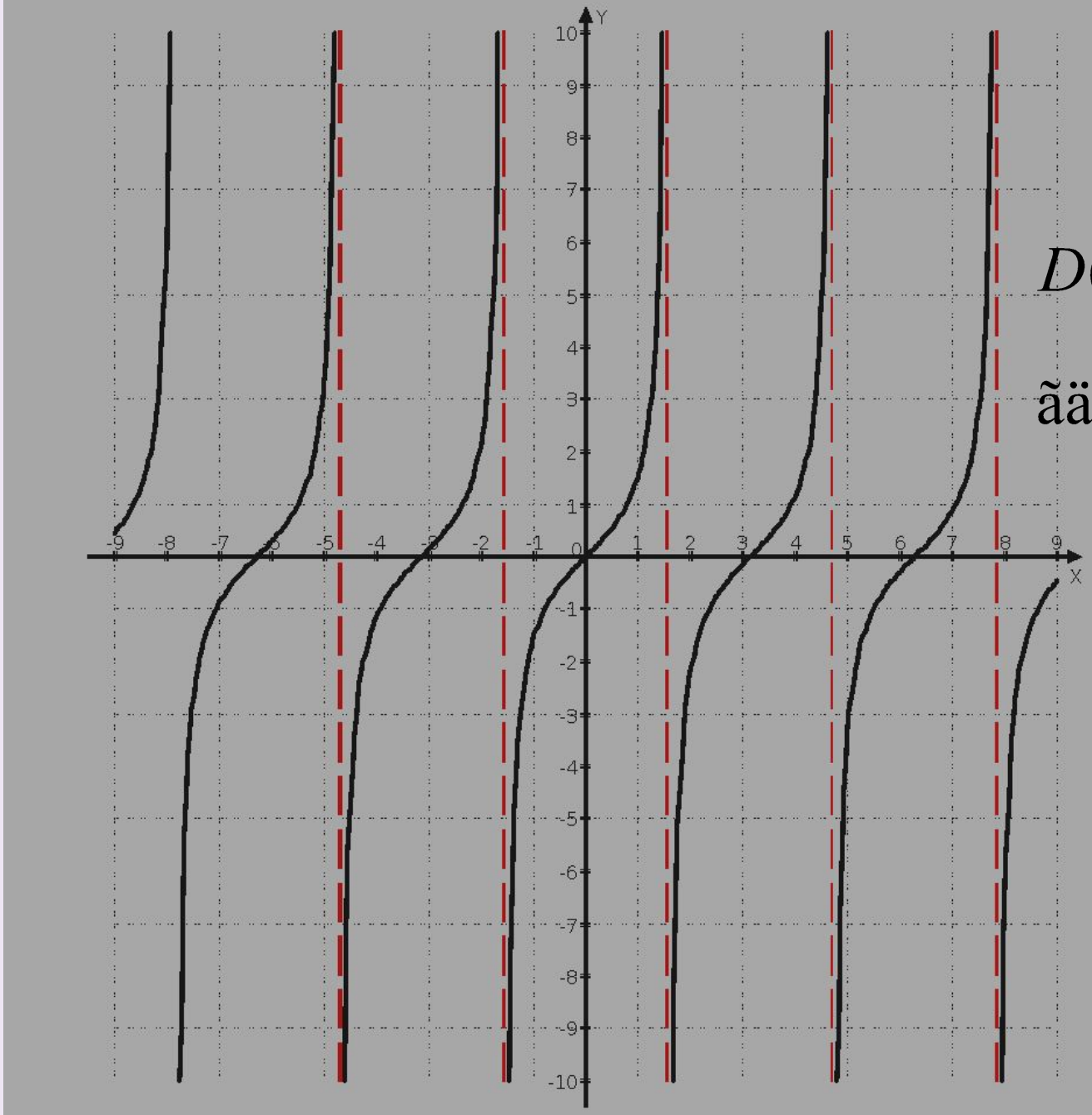
$x = \arccos y$

ïåðåîáîçíà÷èì $x$ è $y$.

$y = \arccos x$

$D(y) = [-1;1]$

$E(y) = [0;\pi]$




$$y = tgx$$

$$D(y): \quad x \neq \frac{\pi}{2} + \pi n,$$

ãääå n - öåëîå.

$$E(y) = R.$$

Âûáåðåì ïðîèçâîëüíîå ,

íà êîîðäèíàòíîé ôóíêöèè

$y = \mathrm{tg}x$ ïîñòðîèì .

ýòî ïðîèçâîëüíàÿ

$(-\frac{\pi}{2};\frac{\pi}{2})$

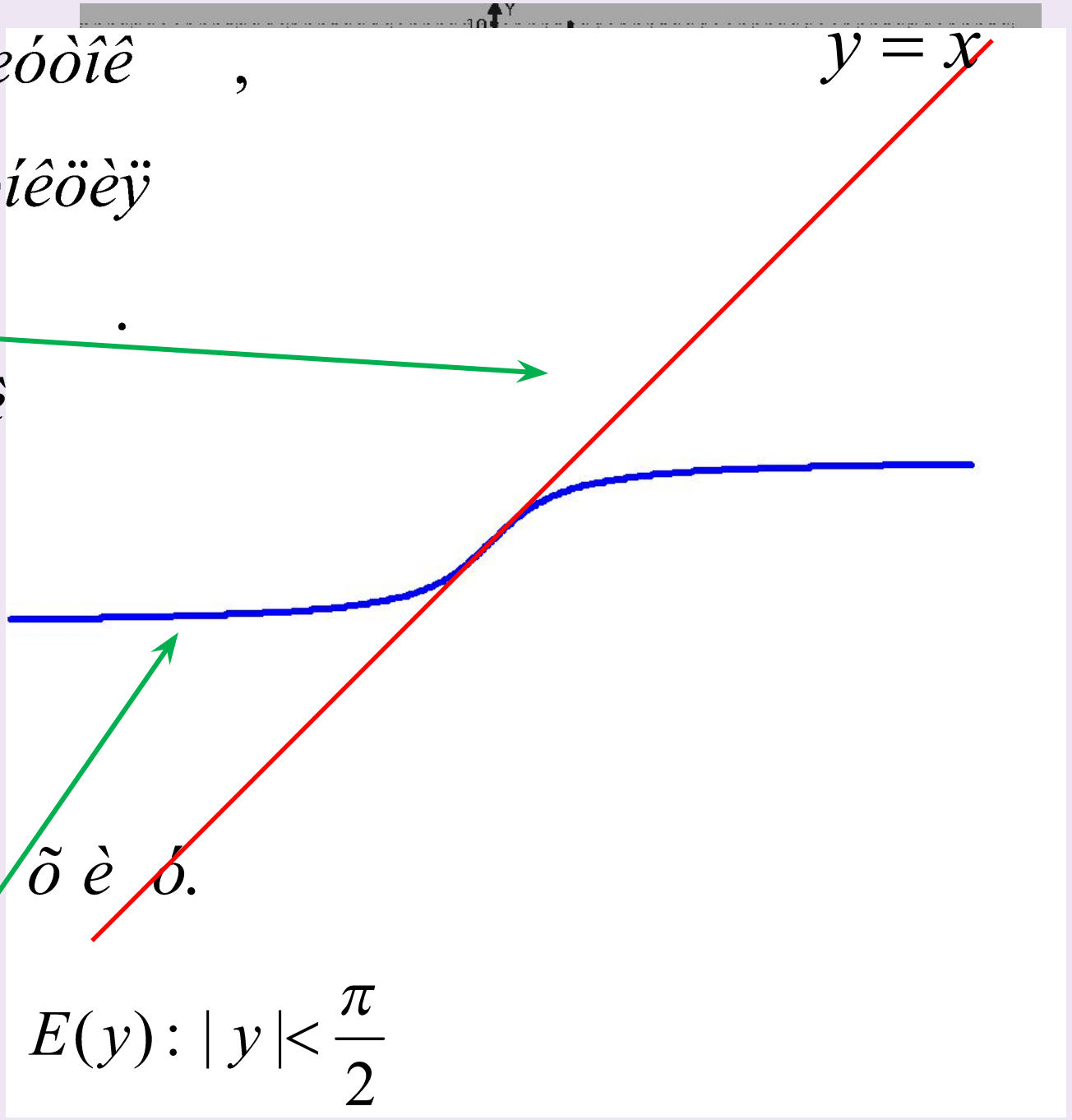
Âûðàçèì õ

$x = arctgy$

ïåðåîáîçíà÷èì õ è ó.

$y = arctgx$

$D(y) = (-\infty;+\infty)$, $E(y): |y| < \frac{\pi}{2}$



Сравнить числа:

$\arcsin\frac{1}{\sqrt{3}}$ **и** $\arcsin\frac{2}{\sqrt{10}}$

$\arcsin\left(-\frac{2}{3}\right)$ **и** $\arcsin\left(-\frac{3}{4}\right)$

$\arccos\frac{1}{\sqrt{3}}$ **и** $\arccos\frac{1}{\sqrt{5}}$

$\arccos\left(-\frac{4}{5}\right)$ **и** $\arccos\left(-\frac{1}{3}\right)$

$arctg\,2\sqrt{3}$ **и** $arctg\,3\sqrt{2}$

$arctg\left(-\frac{1}{\sqrt{2}}\right)$ **и** $arctg\left(-\frac{1}{\sqrt{5}}\right)$