$2\cos^2 x \le \operatorname{sen} x + 1$ $\qquad$ $\frac{\pi}{6}+2k\pi \le x \le \frac{5}{6}\pi + 2k\pi$

$\frac{4\cos^2 x - 3}{2\operatorname{sen} x - 1} > 0$ $\qquad$ $\frac{7}{6}\pi+2k\pi < x < \frac{11}{6}\pi+2k\pi$

$\frac{\sqrt{2}\operatorname{sen}^2 x}{\cos x} > tg^2 x$ $\qquad$ $2k\pi < x < \frac{\pi}{4}+2k\pi \cup \frac{7}{4}\pi+2k\pi < x < 2\pi(k+1)$

$2\cos^2 x \le \operatorname{sen} x + 1$ $\qquad$ $< x \le \frac{3}{2}\pi+2k\pi \cup \frac{\pi}{6}+2k\pi < x < \frac{5}{6}\pi+2k\pi$

$2 \cdot 9^x \ge 3^{x+2} - 10$ $\qquad$ $x < \log_3 2 \cup x > \log_3 \frac{5}{2}$

$\log^2 x + \log x - 6 > 0$ $\qquad$ $0 < x < e^{-3} \cup x > e^2$

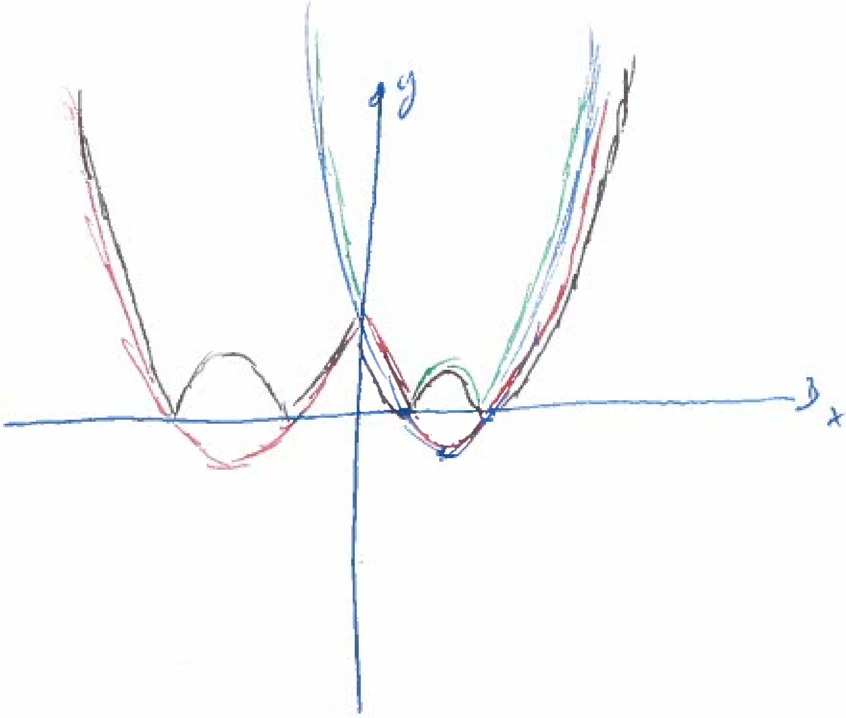
$\log x + \log(2x-1) \le \log(2x+5) + \log 3$ $\qquad$ $\frac{1}{2} < x \le 5$

$f(x) = x^2 - 4x + 3$

$y = |f(x)|$

$y = f(|x|)$

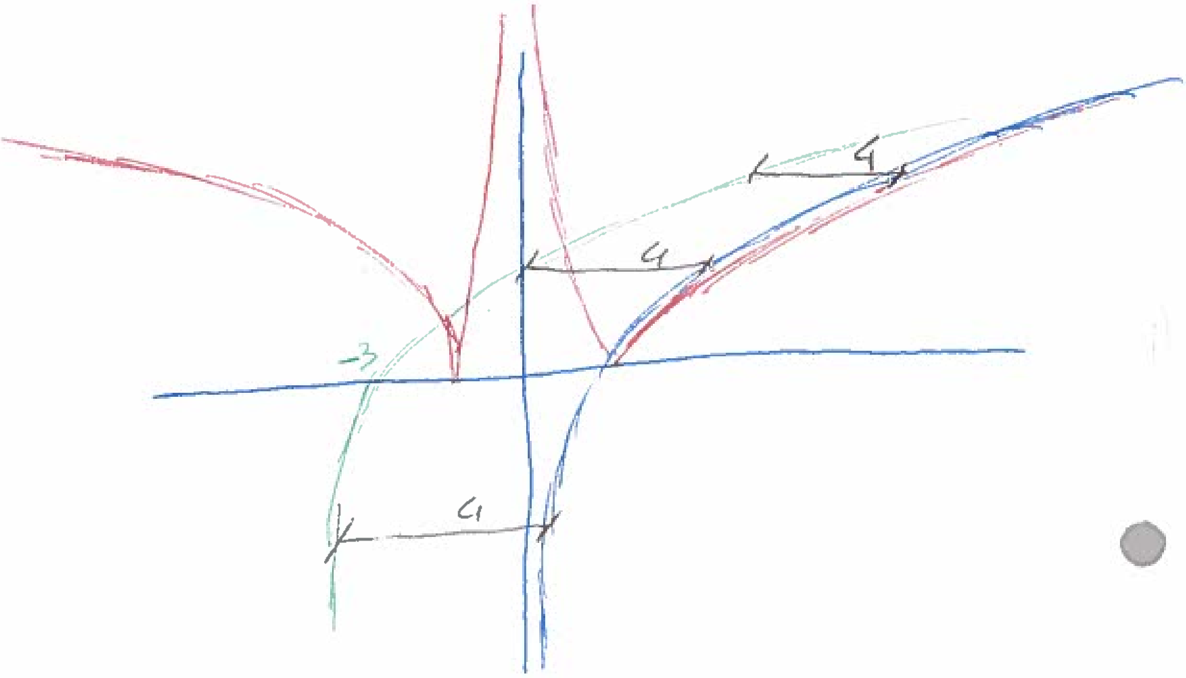
$y = |f(|x|)|$




$f(x) = \log(x)$

$y = \log(x+4)$

$y = |\log(|x|)|$

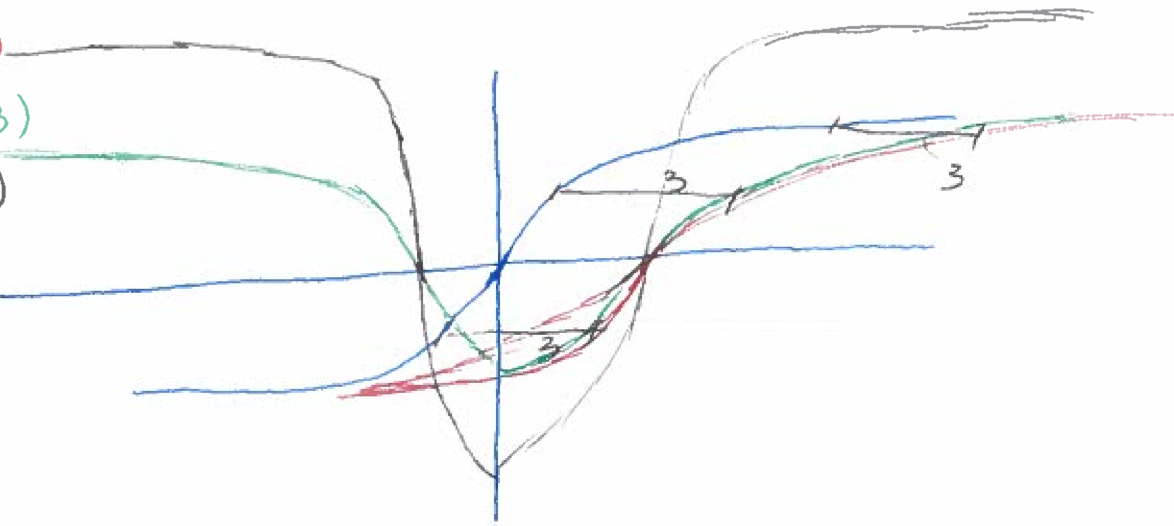



$y = \operatorname{arctg}(x)$

$y = \operatorname{arctg}(x-3)$

$y = \operatorname{arctg}(|x|-3)$

$y = 2\operatorname{arctg}(|x|-3)$



# PRINCIPIO DI INDUZIONE

$$\sum_{k=0}^{N} q^k = \frac{1-q^{N+1}}{1-q}$$

$2^n < n!$ con $n \geq 4$

Dato un poligono con $n$ lati, dimostrare che si hanno $\frac{1}{2}(n-3)n$ diagonali

$$\sum_{k=0}^{N} k^3 = \left(\sum_{k=0}^{N} k\right)^2$$

$$\sum_{k=0}^{N} k = \frac{N(N+1)}{2}$$

$$\sum_{k=1}^{N} (2k-1) = N^2$$