CONCETTO DI DERIVATA

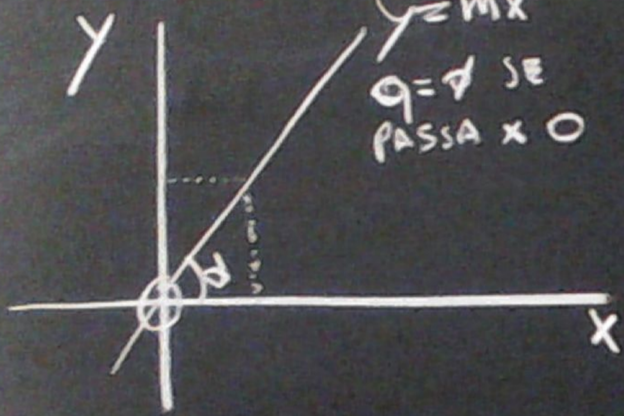
SIGNIFICATO GEOMETRICO

$Q = C/q$

$y = mx + q \Rightarrow y = -\frac{b}{q}x + q \Rightarrow qy = -bx + \frac{c}{\cancel{q}}\cdot \cancel{q} \Rightarrow$

$m = -\frac{b}{q} \Rightarrow \underline{qy + bx + c = 0}$ forma canonica

$\alpha = m = tg\alpha$



q = 0 se passa x O

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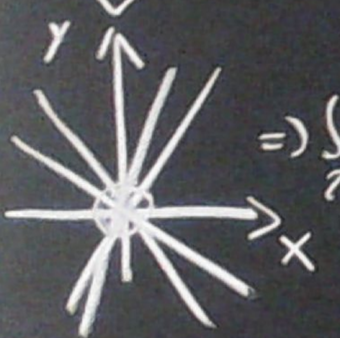
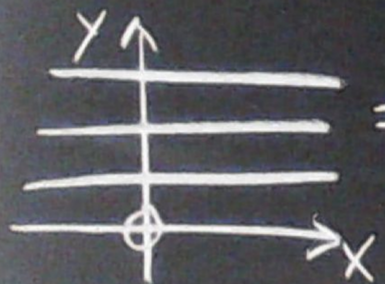
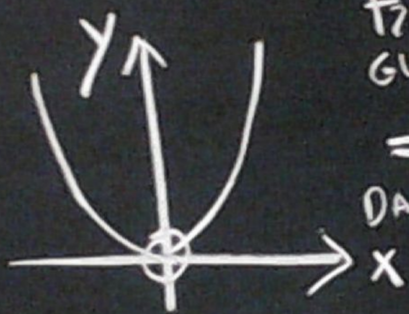


⇒ fascio di rette proprio

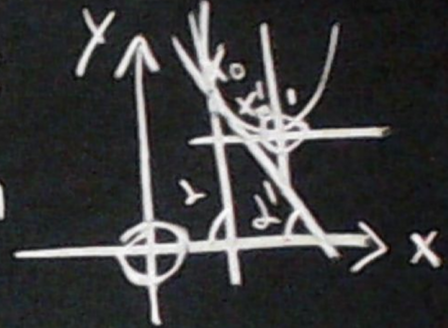


⇒ fascio di rette improprio

SE CONSIDERIAMO UNA IPERBOLE EQUILATERA, AVREMO



TRASLO GLI ASSI ⇒ DA O A O'



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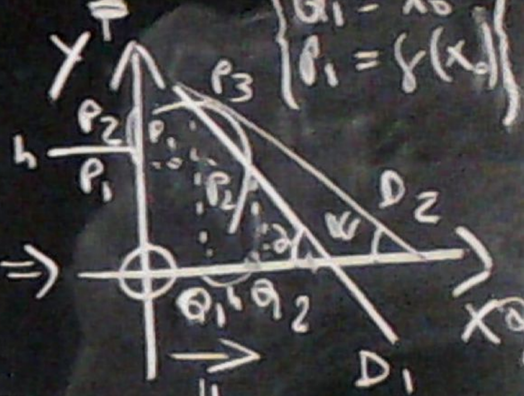

$$\begin{cases} Q_1 = X_0 \\ P_1 = f(X_0) \end{cases}$$

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ELASTICITÀ DELLA DOMANDA

$$\begin{cases} Q_2 = (x_0 + h) \\ P_2 = f(x_0 + h) \end{cases}$$

APPLICANDO LA DISTANZA TRA 2 PUNTI:

$$\frac{f(x_0+h) - f(x_0)}{\cancel{x_0} + h - \cancel{x_0}} = \frac{\Delta Y}{\Delta X} = \frac{\Delta P}{\Delta Q}$$

SE $h \to 0$, ossia $\lim h = \Delta x \to 0 \Rightarrow$

$$f'(X) = \lim_{\Delta x \to 0} \frac{f(x_0 + \Delta x) - f(x_0)}{\Delta x} = \text{DERIVATA DI } f(X)$$

$$\varepsilon = \frac{\Delta Q}{\Delta P}\cdot \frac{P}{Q} \simeq \frac{m'}{m''}\cdot \frac{P}{Q} \simeq \frac{tg\alpha}{tg\alpha'}\cdot \frac{P}{Q}$$