



$$\overline{PH} = \frac{|f(x_0) - mx_0 - q|}{\sqrt{1+m^2}}$$

$$\lim_{x \rightarrow \infty} \frac{|f(x_0) - mx_0 - q|}{\sqrt{1+m^2}} = 0$$

$$\lim_{x \rightarrow \infty} \frac{1}{\sqrt{1+m^2}} |f(x) - mx - q| =$$

$$= \frac{1}{\sqrt{1+m^2}} \lim_{x \rightarrow \infty} \left| x \left(\frac{f(x)}{x} - m - \frac{q}{x} \right) \right| = 0$$

$$\frac{f(x)}{x} - m - \frac{q}{x} \rightarrow 0$$

$$m = \lim_{x \rightarrow \infty} \frac{f(x)}{x}$$