

PARALLELISMO E PERPENDICOLARITÀ TRA RETTE

r) $y = mx + q$ $\left(\begin{array}{l} m = -\frac{a}{b} \\ q = -\frac{c}{b} \end{array} \right)$ $ax + by + c = 0$

s) $y = m_1x + q_1$ $a_1x + b_1y + c_1 = 0$

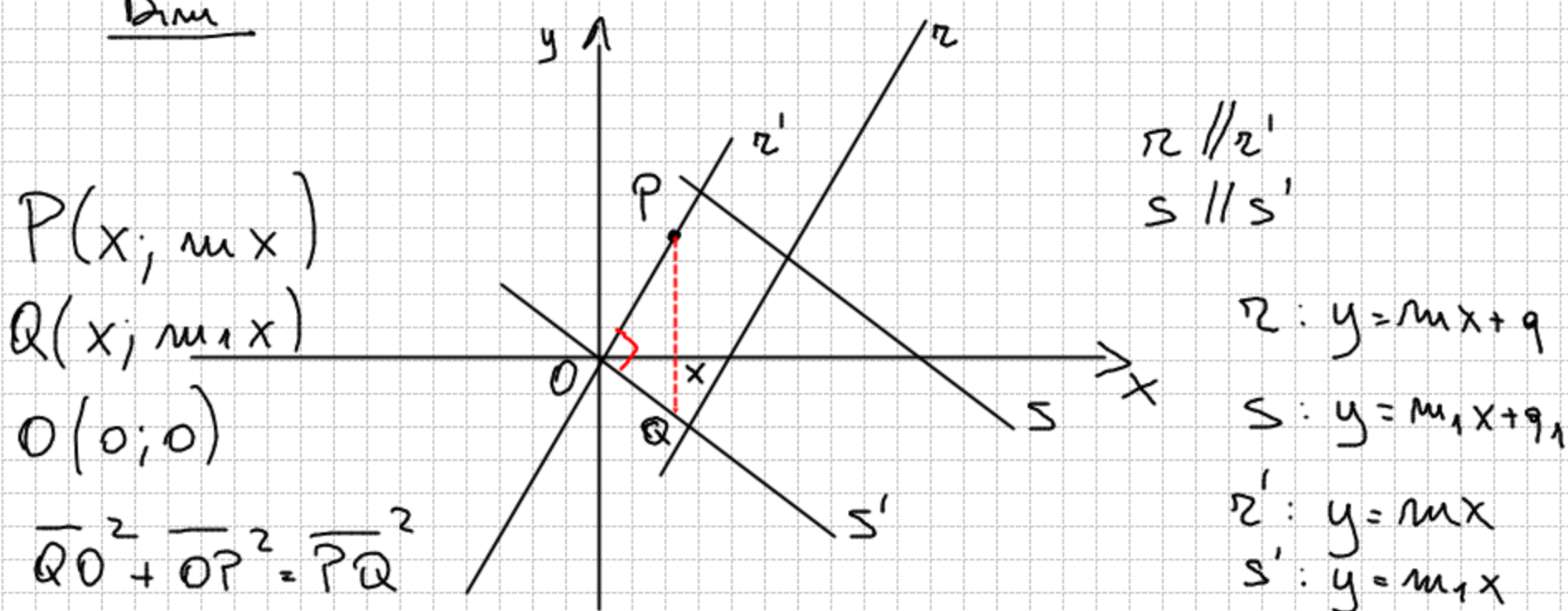
FORMA ESPlicitA r // s FORMA IMPLICITA

$$m = m_1 \qquad -\frac{a}{b} = -\frac{a_1}{b_1}$$

FORMA ESPlicitA r ⊥ s FORMA IMPLICITA

$$m \cdot m_1 = -1 \qquad \left(-\frac{a}{b}\right) \left(-\frac{a_1}{b_1}\right) = -1$$

Dimo



$P(x; mx)$

$Q(x; m_1x)$

$O(0; 0)$

$\overline{OQ}^2 + \overline{OP}^2 = \overline{PQ}^2$

$\overline{OQ}^2 = x^2 + m_1^2 x^2 = x^2 (1 + m_1^2)$

$\overline{OP}^2 = x^2 + m^2 x^2 = x^2 (1 + m^2)$

$\overline{PQ}^2 = |mx - m_1x|^2 = x^2 (m - m_1)^2$

$x^2 (1 + m_1^2) + x^2 (1 + m^2) = x^2 (m - m_1)^2$

$2 + m_1^2 + m^2 = m^2 + m_1^2 - 2mm_1$

$m \cdot m_1 = -1$