

# PARALLELISMO E PERPENDICOLARITÀ TRA RETTE

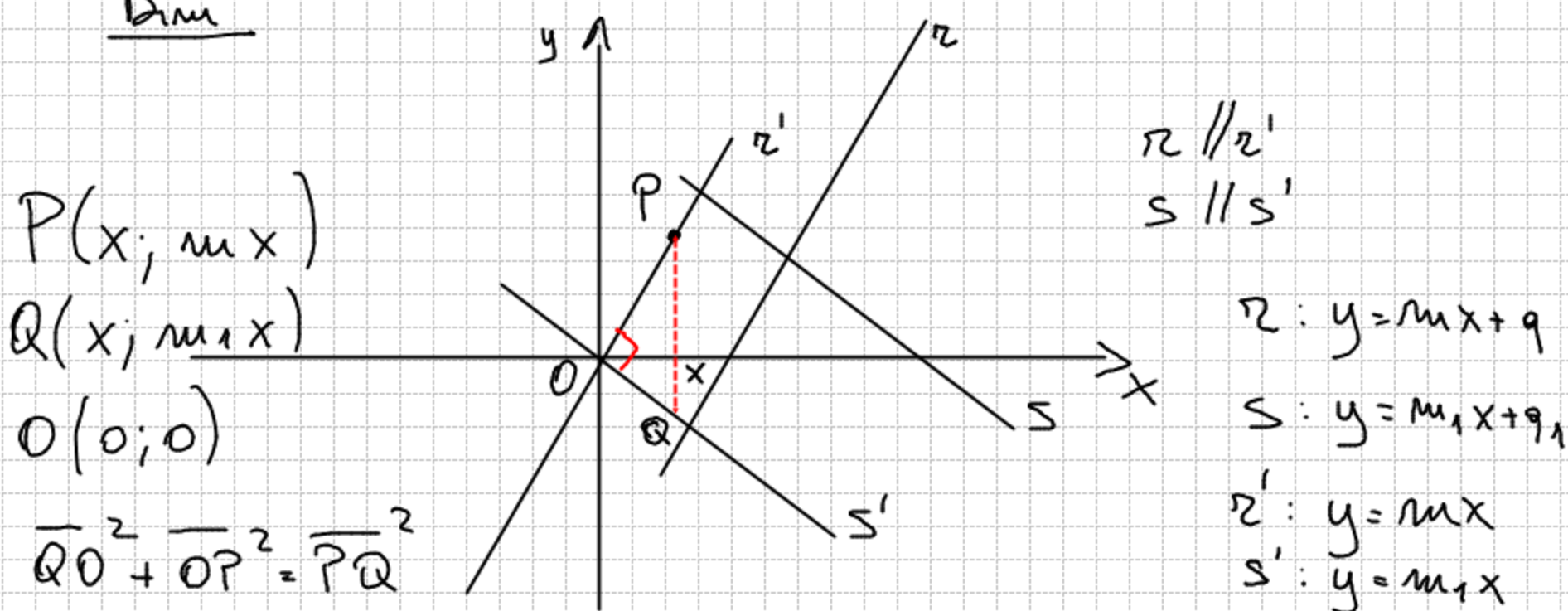
r)  $y = mx + q$        $\left( \begin{array}{l} m = -\frac{a}{b} \\ q = -\frac{c}{b} \end{array} \right)$        $ax + by + c = 0$

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

FORMA ESPlicita      r // s      FORMA IMPLICITa  
 $m = m_1$        $-\frac{a}{b} = -\frac{a_1}{b_1}$

FORMA ESPlicita      r ⊥ s      FORMA IMPLICITa  
 $m \cdot m_1 = -1$        $\left(-\frac{a}{b}\right)\left(-\frac{a_1}{b_1}\right) = -1$

Dimo



$P(x; mx + q)$

$Q(x; m_1x + q_1)$

$O(0; 0)$

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

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

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

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

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

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

$m \cdot m_1 = -1$