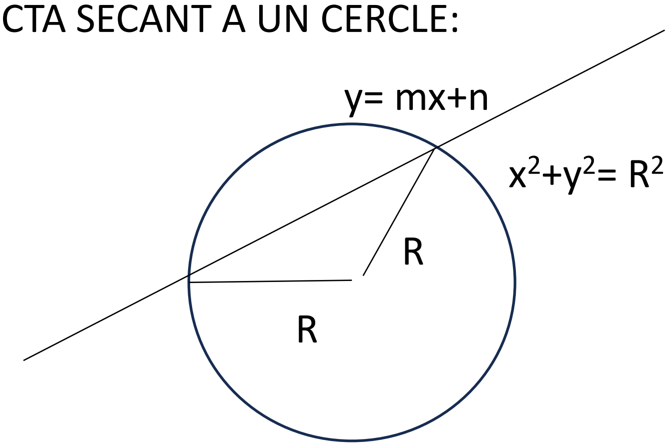
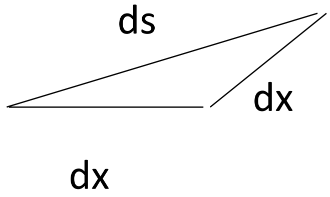
RECTA SECANT A UN CERCLE:



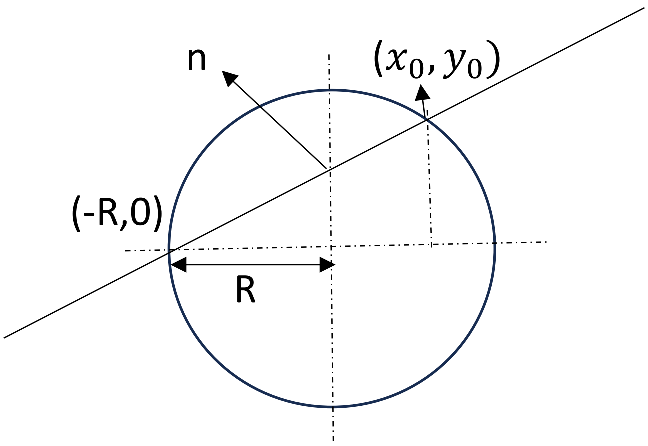


$ds^2=(2dx)^2$

$y^2= R^2- x^2$ $\qquad$ $y^2= (mx+n)^2$

$R^2- x^2= m^2.x^2+ n^2+ 2mnx$ $\qquad$ $-x^2(1-m^2)- 2mnx+ (R^2- m^2)= 0$

$$x= \frac{2mn\pm\sqrt{4m^2n^2-4(R^2-m^2).(1-m^2)}}{2(R^2-m^2)} = \frac{mn\pm\sqrt{m^2n^2-(R^2-m^2).(1-m^2)}}{(R^2-m^2)}$$



$\vec{v}$= vector director= (x_0, y_0)- (-R,0)= $(x_0 + R, y_0)$

Sabent que (x, y)= t.($\vec{v}$)+ (-R, 0) x= t. $(x_0 + R)$+ (- R)= R(t-1)+ t. x_0

y= t. y_0

atenció que podem escriure ${x_0}^2$+${y_0}^2$= R^2 relatiu al cercle

i també la pendent de la recta y= mx+ n: $\frac{y_0}{(R+\, x_0)}$

obtenint y= $\frac{y_0}{(R+\, x_0)}$.x + n ara, si substituïm (x, y) per un punt de la recta, obtindrem “n”: 0= $\frac{y_0}{(R+\, x_0)}$.(-R)+ n → n= $\frac{y_0}{(R+\, x_0)}$.(R)

També podem jugar una mica:

$y_0 = \sqrt{R^2 - (x_0)^2}$ substituïnt: y= $\frac{\sqrt{R^2-(x_0)^2}}{(R+\, x_0)}$ x+ $\frac{y_0}{(R+\, x_0)}$.(R)

y= $\frac{\sqrt{(R+x_0)(R-x_0)}}{(R+\, x_0)}$ x+ $\frac{y_0}{(R+\, x_0)}$.(R) → y= $\frac{\sqrt{(R-x_0)}}{\sqrt{(R+x_0)}}$ .x+ $\frac{y_0}{(R+\, x_0)}$.(R)