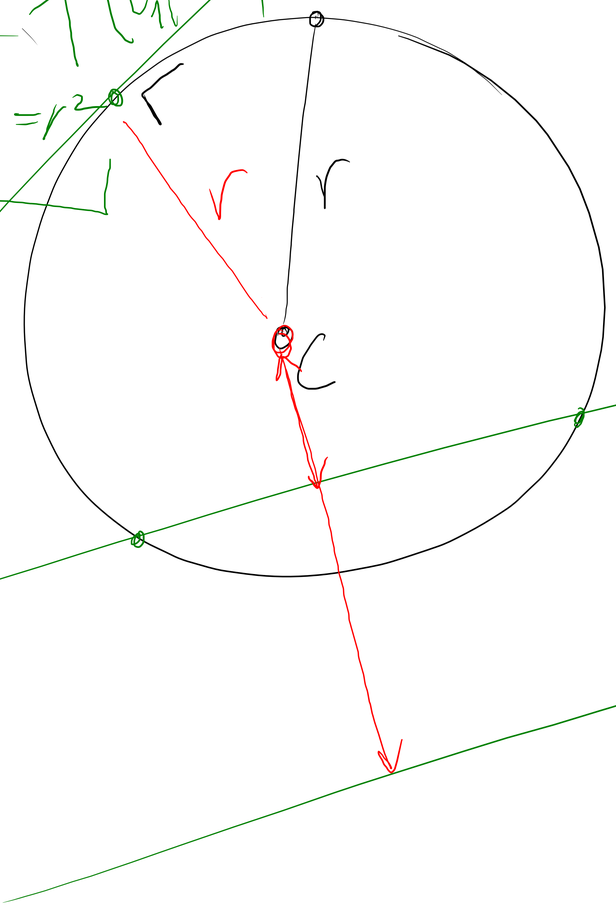
$T(t_1; t_2)$

$(t_1 - a)(x - a) + (t_2 - b)(y - b) = r^2$

dédoubler

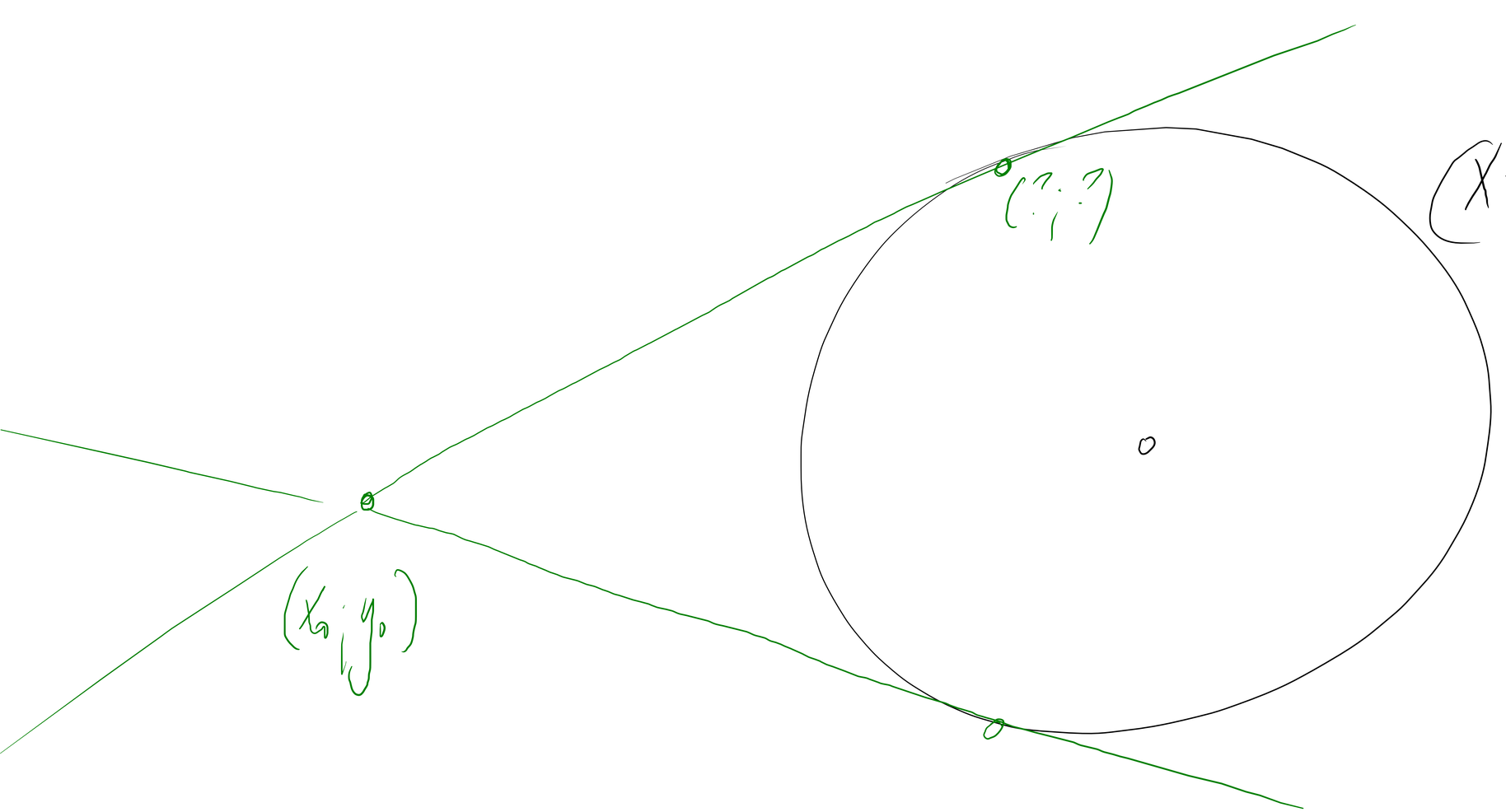
$(x-a)^2 + (y-b)^2 = r^2$

$C(a; b)$



$d: ex + ky + m = 0$

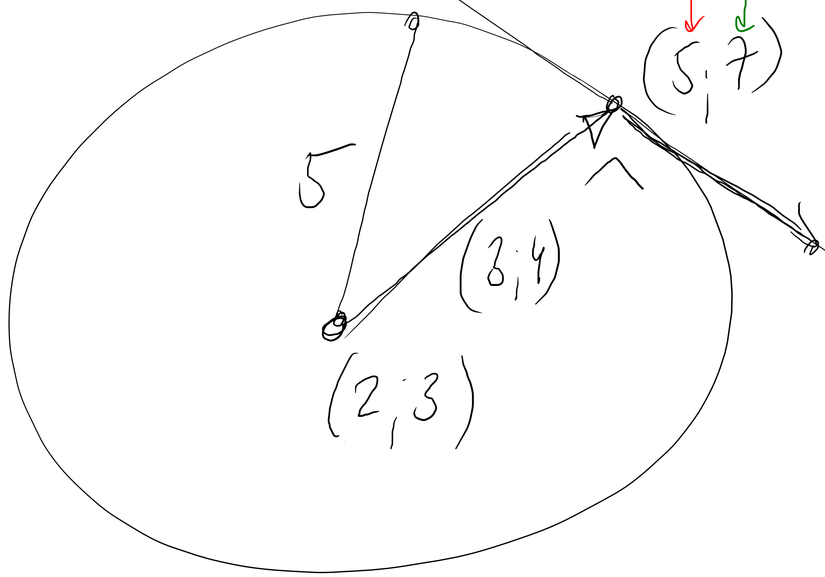
$dist(C; d) = \dfrac{|ea + kb + m|}{\sqrt{e^2 + k^2}}$



$$(x-2)^2+(y-6)^2=r^2$$

$3x+4y+k=0$

$\boxed{3x+4y-43=0}$



$(5;7)$

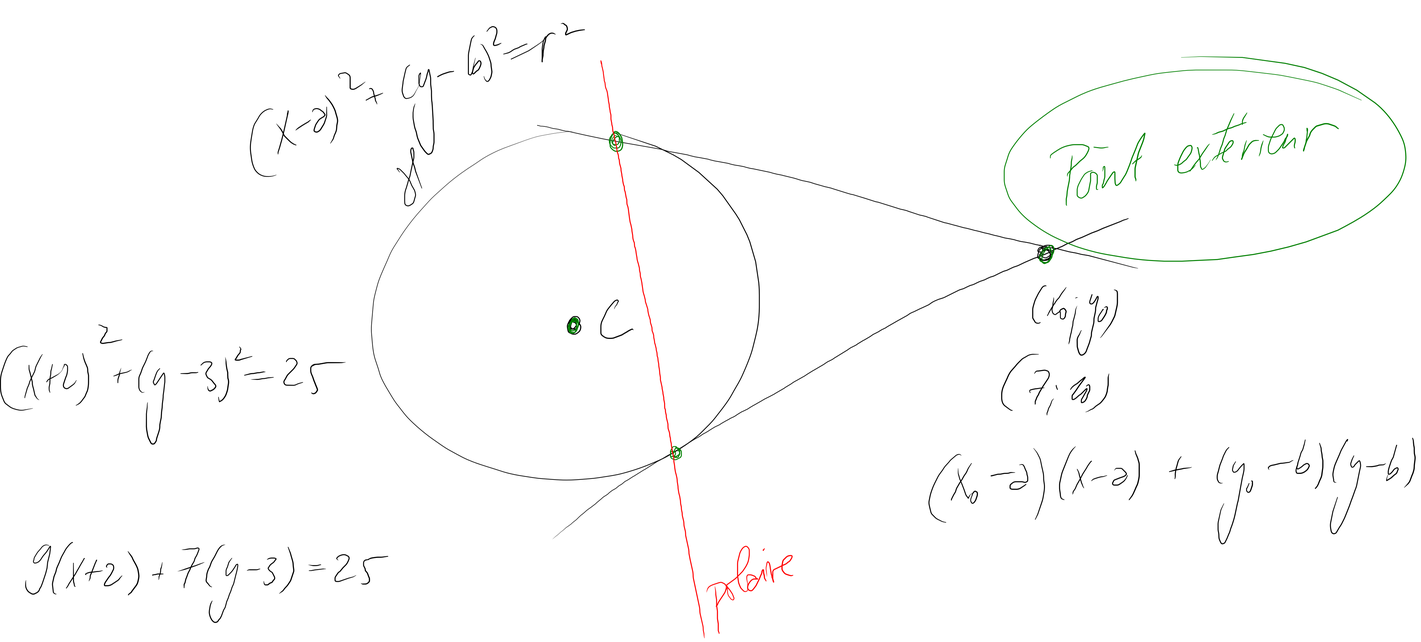
$(x-2)(x-2)+(y-3)(y-3)=25$

$(x-2)^2+(y-3)^2=25$

$t: (5-2)(x-2)+(7-3)(y-3)=25$

$3x-6+4y-12=25$

$\boxed{3x+4y-43=0}$



$$(x_0-a)(x-a)+(y_0-b)(y-b)=r^2$$

$$9(x+2)+7(y-3)=25$$

$$9x+18+7y-21=25$$

$$9x+7y=28$$

$$y=4-\frac{9}{7}x \quad \Rightarrow \quad x^2+4x+4+\left(4-\frac{9}{7}x-3\right)^2=25$$

$$\Leftrightarrow \quad x^2+4x+\left(1-\frac{9}{7}x\right)^2=21$$

$$\Leftrightarrow \quad x^2+4x+1-\frac{18}{7}x+\frac{81}{49}x^2=21 \qquad \cdot 49$$

$$\Leftrightarrow \quad 49x^2+196x+49-126x+81x^2=1029$$

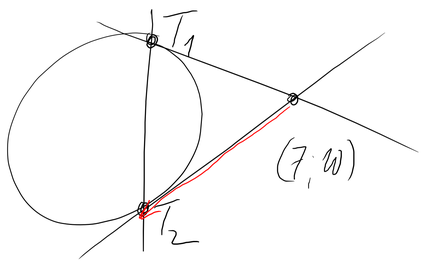
$$130x^2+70x-980=0$$

$$13x^2+7x-98=0$$

$$x=\frac{-7\pm\sqrt{49+4\cdot 13\cdot 98}}{26}$$

$-3{,}03=x_1$

$7{,}49=x_2$



$$y_1=4-\frac{9}{7}\cdot(-3{,}03)=7{,}90$$

$$y_2=4-\frac{9}{7}\,7{,}49$$

t_1 : par $(7;10)$ et $(-3{,}03;\ 7{,}90)$

$2{,}1x-10{,}03y-85{,}6=0$

$\vec{d}=\begin{pmatrix}10{,}03\\2{,}1\end{pmatrix}$

$$2{,}1\cdot x-10{,}03\,y+k=0$$

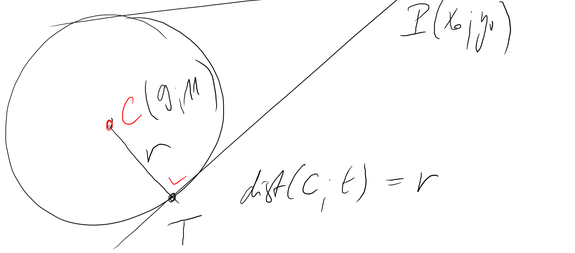
$$-\left(2{,}1\cdot 7-10{,}03\cdot 10\right)=k$$

$$-(14{,}7-100{,}3)=k$$

$$k=-85{,}6$$

$y = mx + h \quad | \quad mx - y + h = 0 \qquad -12m + 4 = h$

$(x-9)^2 + (y-m)^2 = 29$



$\frac{|m \cdot 9 - m + h|}{\sqrt{m^2+1}} = \sqrt{29} \quad / \quad |9m - m - 12m + 4| = \sqrt{m^2+1} \cdot \sqrt{29}$

$(3m+7)^2 = 29m^2 + 29$

$9m^2 + 42m + 49 = 29m^2 + 29$

$20m^2 - 42m - 20 = 0$

$10m^2 - 21m - 10 = 0$

$m = \frac{21 \pm \sqrt{441 + 400}}{20}$

$m = \frac{21 \pm 29}{20} \quad \begin{matrix} 5/2 \\ -2/5 \end{matrix}$

$h = -12m + 4$

$t_1: y = \frac{5}{2}x + h_1 = \frac{5}{2}x - 26 = 2{,}5x - 26$

$t_2: y = -\frac{2}{5}x + h_2 = -\frac{2}{5}x + 8{,}8 = -0{,}4x + 8{,}8$

$(x-a)^2 + (y-b)^2 = r^2$

$t: y = mx + h \Leftrightarrow \boxed{mx - y + h = 0}$

$\text{dist}(C;t) = r$

$\frac{|m \cdot a - b + h|}{\sqrt{m^2+1}} = r \quad \Leftrightarrow \quad (ma - b + h)^2 = r^2(m^2+1)$

por $P(x_0|y_0) \qquad y_0 = mx_0 + h \quad / \quad h = y_0 - mx_0$

$\Leftrightarrow \boxed{(ma - b + y_0 - mx_0)^2 = r^2(m^2+1)}$

Inconnue : m