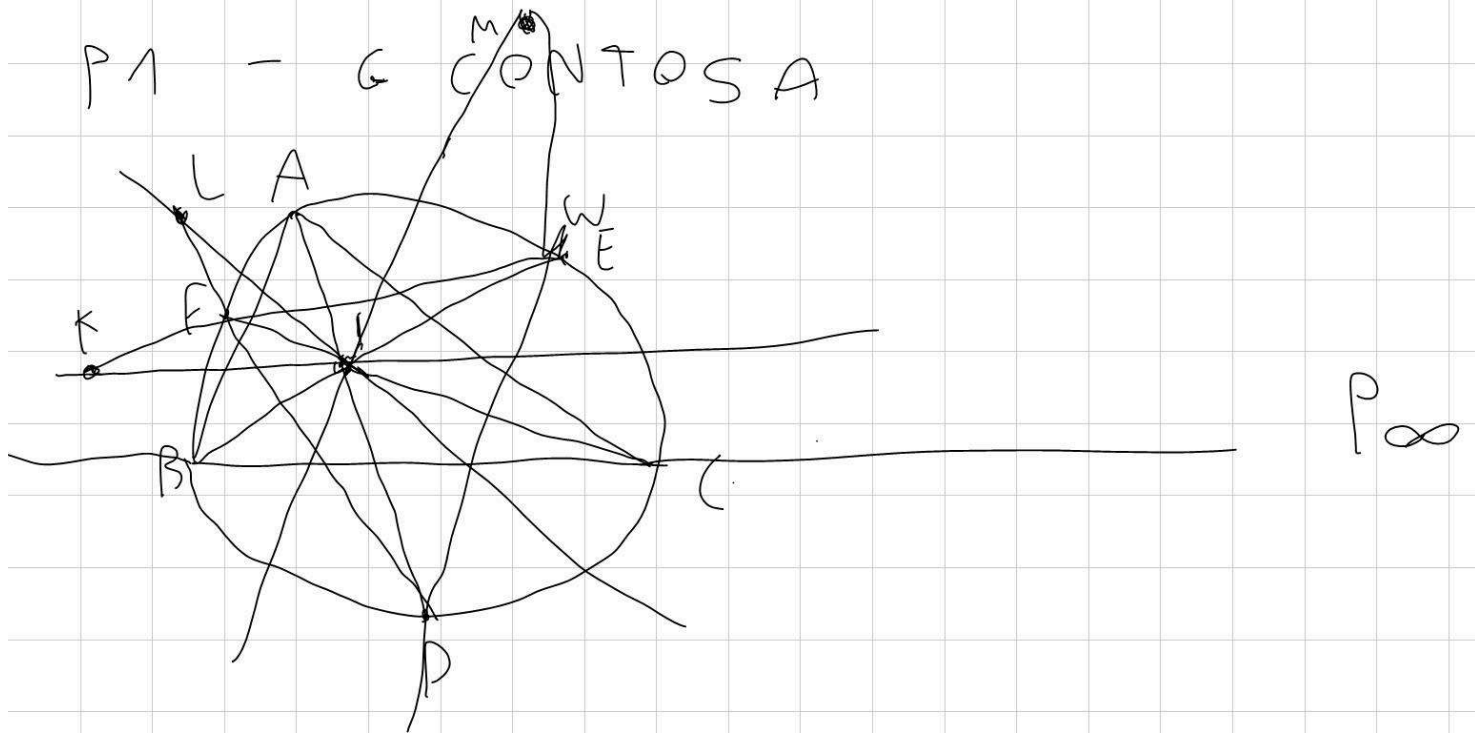




$$A = (1:0:0) \quad B = (0:1:0) \quad C = (0:0:1)$$

$$I = (a, b, c)$$

$$a^2 yz + b^2 zx + c^2 xy = 0$$

$$\frac{y}{z} = \frac{b}{c}$$

$$z = \frac{c}{b} y$$

$$\frac{a^2}{b} y^2 + b x y + c x y = 0$$

$$\frac{a^2}{b} y + b x + c x = 0$$

$$\begin{aligned} y &= 0 \\ \Rightarrow z &= 0 \end{aligned} \Rightarrow A$$

$$\rightarrow y \neq 0$$

$$x = -\frac{a^2}{b(b+c)} y$$

$$y = b(b+c) \quad x = -a^2$$

$$z = c(b+c)$$

$$D = (-a^2, b(b+c), c(b+c))$$

$$E = (a(a+c), -b^2, c(a+c))$$

$$F = (a(a+b), b(a+b), -c^2)$$

$$x + y + z = 0$$

$$y + z = 0$$

$$x = 0$$

$$P_{\infty} = (0 : 1 : -1)$$

$$v := P_{\infty} I$$

$$\begin{vmatrix} 0 & 1 & -1 \\ a & b & c \\ x & y & z \end{vmatrix}$$

$$cx - ay - az + bx = 0$$

$$(b+c)x - ay - az = 0$$

$$E = (a(a+c), -b^2, c(a+c))$$

$$F = (a(a+b), b(a+b), -c^2)$$

$$\begin{vmatrix} a(a+c) & -b^2 & c(a+c) \\ a(a+b) & b(a+b) & -c^2 \\ ax' & by' & cz' \end{vmatrix}$$

$$X = ax' \quad Y = by' \quad Z = cz'$$

$$\begin{vmatrix} a+c & -b & a+c \\ a+b & a+b & -c \\ x' & y' & z' \end{vmatrix} = 0$$

$$\begin{aligned} & (a+c)(a+b)z' + bcx' + (a+c)(a+b)y' + b(a+b)z' \\ & - (a+b)(a+c)x' \\ & \quad \quad \quad (a+b+c) \end{aligned}$$

$$(a+b) \frac{z}{c} + (a+c) \frac{y}{b} = bc$$

$$\begin{cases} b(a+b)z + c(a+c)z - bcx = 0 \\ (b+c)x - a^2y - az = 0 \end{cases}$$

$$K = (a(c-b), -b^2, c^2)$$

$$L = (a^2, b(a-c), -c^2)$$

$$M = (-a^2, b^2, c(b-a))$$

$$\left| \begin{array}{ccc|c} c-b & -b & c & \\ a & a-c & -c & \\ -a & b & b-a & \end{array} \right| \rightarrow$$

$$\left| \begin{array}{ccc|c} c-b & -c & c & \\ a & -c & -c & \\ -a & b+a & b-a & \end{array} \right| \rightarrow$$

$$\rightarrow \left| \begin{array}{ccc|c} c-b & -c & 0 & \\ a & -c & -c & \\ -a & b+a & b & \end{array} \right| \rightarrow$$

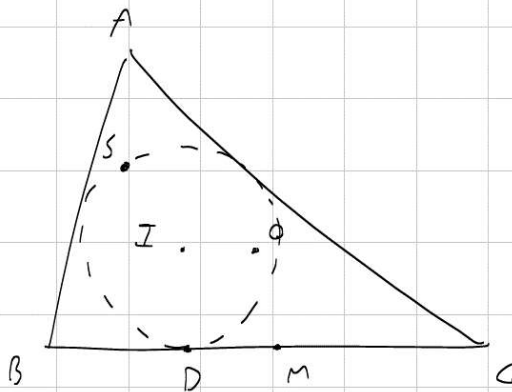
$$\rightarrow \left| \begin{array}{ccc|c} c-b & -c & 0 & \\ a & 0 & -c & \\ -a & a & b & \end{array} \right| \rightarrow$$

$$\rightarrow \left| \begin{array}{ccc|c} -b & -c & 0 & \\ a & 0 & -c & \\ 0 & a & b & \end{array} \right|$$

$$abc - a^2c = 0$$



2)



$$\triangle AIO \cong \triangle SDM$$

Fontene'

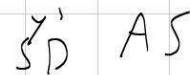
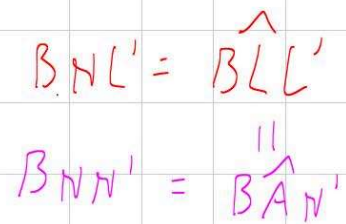
3)

The diagram shows a circle with center O . Points A , Q , R , and T are marked on the circle's circumference. A horizontal line passes through Q and A . A vertical line passes through R . A diagonal line passes through T . Several other lines and arcs are drawn, including a pink arc near R and a purple arc near A . The diagram is drawn on a grid background.

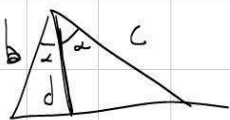


Hand-drawn diagram of a circle with a vertical line through its center. The line is labeled 'x' at the top and 'y' at the bottom. A small circle is drawn around the intersection of the line and the circle's circumference. The word 'fix' is written next to the 'x' label.

[illegible]



$$(A_B, A_P, A_S, A_T) = -1$$



$$d = \frac{26c \sin \alpha}{b + c}$$

$$x' = \sqrt{BE = \frac{26 \times \sin \alpha}{6 + x}}$$

$$BS = \cancel{x} \quad BT = z \quad y \cdot z = AL' \cdot x = \frac{2bc \cos^2 \alpha \cdot x}{b+c}$$

$$AL' = AL \cdot \cos \alpha = \frac{2bc \cos^2 \alpha}{b+c}$$

$$yz = \frac{2bcx \cos^2 \alpha}{b+c}$$

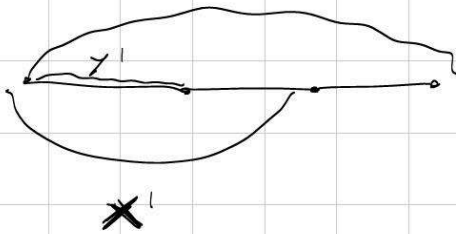
$$(z - b \cos \alpha)(b \cos \alpha - y) = BD \cdot DL = b \cos \alpha \left(\frac{2bc \cos \alpha}{b+c} - b \cos \alpha \right)$$

$$DL = AL - AD = \frac{2bc \cos \alpha}{b+c} - b \cos \alpha$$

$$\cancel{-z} + (y+z) \cancel{b \cos \alpha} = \frac{2b^2 \cos^2 \alpha + 2bcx \cos^2 \alpha}{b+c}$$

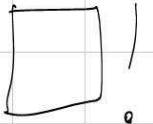
$$y+z = \frac{2(b+x) \cdot c \cdot \cos^2 \alpha}{b+c}$$

BE



$$x = \frac{2yz}{y+z}$$

$$\frac{2bcx \cos \alpha}{b+c} = \frac{2yz}{y+z}$$



$$\left(\frac{2bcx \cos^2 \alpha}{b+c} \right)$$

$$\frac{b \cdot x \cos \alpha}{b+x}$$

$$\frac{2(b+x) \cdot x \cdot \cos^2 \alpha}{b+c}$$