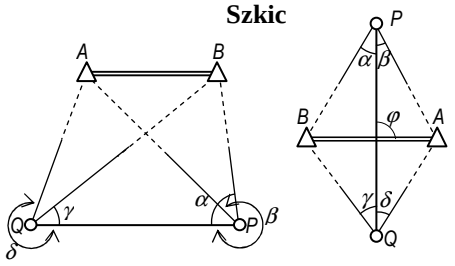
Zadanie Hansena

Szkic



Wzory i obliczenia wstępne:

$$(X,Y)_P = \begin{vmatrix} X_A & \underbrace{\begin{vmatrix} Y_A & 1 \\ -\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{A_0} & X_B & \underbrace{\begin{vmatrix} Y_B & 1 \\ +\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{B_0} \\ -1 & A & +1 & B \end{vmatrix}_{(1,2)}$$

$$(X,Y)_Q = \begin{vmatrix} X_A & \underbrace{\begin{vmatrix} Y_A & 1 \\ +\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{C_0} & X_B & \underbrace{\begin{vmatrix} Y_B & 1 \\ -\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{D_0} \\ +1 & C & -1 & D \end{vmatrix}_{(1,2)}$$

$A = \operatorname{ctg}\alpha =$ .....

$B = \operatorname{ctg}\beta =$ .....

$C = \operatorname{ctg}\gamma =$ .....

$D = \operatorname{ctg}\delta =$ .....

$$\operatorname{tg}\varphi = \frac{A+B+C+D}{\begin{vmatrix} A & B \\ C & D \end{vmatrix}_1} =$$

= .....

Dane:

X_A		Y_A	
X_B		Y_B	
$\sphericalangle APB$		$\sphericalangle AQB$	
$\sphericalangle QPA$		$\sphericalangle BQP$	
α		β	
γ		δ	

Zestawienie formy rachunkowej do obliczenia punktu P

X_A		Y_A		X_B		Y_B	
-1	-1	A_0		+1	+1	B_0	

Zestawienie formy rachunkowej do obliczenia punktu Q

X_A		Y_A		X_B		Y_B	
+1	+1	C_0		-1	-1	D_0	

Współrzędne punktów szukanych

X_P		Y_P		X_Q		Y_Q	

Kontrola:

$$\operatorname{tg}\varphi = \begin{vmatrix} \Delta x_{PQ} & \Delta y_{PQ} \\ \Delta x_{AB} & \Delta y_{AB} \end{vmatrix}_0 = \text{.....}$$

Kontrola:

$$\operatorname{tg}\alpha = \begin{vmatrix} \Delta x_{PQ} & \Delta y_{PQ} \\ \Delta x_{PB} & \Delta y_{PB} \end{vmatrix}_0 = \text{.....} \quad \sphericalangle QPB = \text{.....}$$

$$\operatorname{tg}(360° - \delta) = \begin{vmatrix} \Delta x_{QA} & \Delta y_{QA} \\ \Delta x_{QP} & \Delta y_{QP} \end{vmatrix}_0 = \text{.....} \quad \sphericalangle AQP = \text{.....}$$

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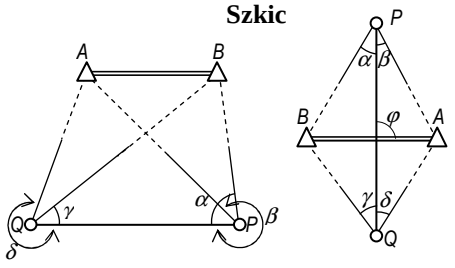

Wzory i obliczenia wstępne:

$$(X,Y)_P = \begin{vmatrix} X_A & \underbrace{\begin{vmatrix} Y_A & 1 \\ -\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{A_0} & X_B & \underbrace{\begin{vmatrix} Y_B & 1 \\ +\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{B_0} \\ -1 & A & +1 & B \end{vmatrix}_{(1,2)}$$

$$(X,Y)_Q = \begin{vmatrix} X_A & \underbrace{\begin{vmatrix} Y_A & 1 \\ +\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{C_0} & X_B & \underbrace{\begin{vmatrix} Y_B & 1 \\ -\operatorname{tg}\varphi & 1 \end{vmatrix}_0}_{D_0} \\ +1 & C & -1 & D \end{vmatrix}_{(1,2)}$$

$A = \operatorname{ctg}\alpha =$ .....

$B = \operatorname{ctg}\beta =$ .....

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$D = \operatorname{ctg}\delta =$ .....

$$\operatorname{tg}\varphi = \frac{A+B+C+D}{\begin{vmatrix} A & B \\ C & D \end{vmatrix}_1} =$$

= .....

Dane:

X_A		Y_A	
X_B		Y_B	
$\sphericalangle APB$		$\sphericalangle AQB$	
$\sphericalangle QPA$		$\sphericalangle BQP$	
α		β	
γ		δ	

Zestawienie formy rachunkowej do obliczenia punktu P

X_A		Y_A		X_B		Y_B	
-1	-1	A_0		+1	+1	B_0	

Zestawienie formy rachunkowej do obliczenia punktu Q

X_A		Y_A		X_B		Y_B	
+1	+1	C_0		-1	-1	D_0	

Współrzędne punktów szukanych

X_P		Y_P		X_Q		Y_Q	

Kontrola:

$$\operatorname{tg}\varphi = \begin{vmatrix} \Delta x_{PQ} & \Delta y_{PQ} \\ \Delta x_{AB} & \Delta y_{AB} \end{vmatrix}_0 = \text{.....}$$

Kontrola:

$$\operatorname{tg}\alpha = \begin{vmatrix} \Delta x_{PQ} & \Delta y_{PQ} \\ \Delta x_{PB} & \Delta y_{PB} \end{vmatrix}_0 = \text{.....} \quad \sphericalangle QPB = \text{.....}$$

$$\operatorname{tg}(360° - \delta) = \begin{vmatrix} \Delta x_{QA} & \Delta y_{QA} \\ \Delta x_{QP} & \Delta y_{QP} \end{vmatrix}_0 = \text{.....} \quad \sphericalangle AQP = \text{.....}$$