Obliczenie wcięcia kątowego w przód poprzez rozwiązanie trójkąta

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Oznaczenia punk-tów | Kąty  poziome  *g c cc*  ° ′ ″ | | | Azymuty  *A*  *g c cc*  ° ′ ″ | | | Długości boków  *d* | Przyrosty | | Współrzędne | | Oznaczenia punktów | Obliczenie azymutu *AAB* i długości bazy *dAB* .  Uwagi i szkice. |
| Δ*x* | Δ*y* | *X* | *Y* |
| 1 | 2 | | | 3 | | | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| *P*  Δ*xAB =.............*  Δ*yAB =.............*  ***dAB =..........***  *β α*  ***B*** ***A***  *(A)* | ***α*** |  |  |  |  |  |  |  |  |  |  | *(A)* | ***AAB =*** .......................... |
|  |  |  |  |  |  |
| *(P)* | × | × | × |  |  | ***(P)*** |
| × | × | × | × | × | × |
| *(B)* | ***β*** |  |  |  |  | *(B)* |
|  |  |  |  |  |  |
| *(P)* | ***γ****dane =* | *180*°- | *(α+β)* | *Kontrola* | *Kontrola* | *(P)* |
|  |  |  |  |  |  |
| **Kontrola:** Obliczenie kąta *γobl.* ze współrzędnych  tg *APA =....................................APA =.........................* *γdane =.........................*  *tg APB =....................................APB =......................... APB – APA =γobl. =.........................* | | | | | | | | | | | | | |

###### Obliczenie wcięcia kątowego w przód za pomocą symboli rachunkowych

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UUwagi i szkice *P*  *β α*  ***B***  ***A*** | | | | FORMA RACHUNKOWA NA **KĄTOWE WCIĘCIE W PRZÓD** | | | | | | | | | | | |
| ***X*A** |  | | | | ***Y*A** | |  | ***X*B** |  | ***Y*B** |  |
| **-1** | *-1* | | | | **ctg *β*** | |  | **+1** | *+1* | **ctg *α*** |  |
| ***A*** |  | | | | ***B*** | |  | ***C*** |  | **Nr pt.** |  |
| Wzory : (*XP,YP)=* | | | | | | | | WSPÓŁRZĘDNE PUNKTU WCINANEGO | | | |
| ***XP*** |  | ***YP*** |  |
| **Kąt** | *g*  **°** | *c*  **′** | *cc*  **″** |
| ***α*** |  |  |  |  | | | | | |  | | | Kontrola: Obliczenie kąta γ ze współrzędnych:  =  *γobl* = ........................... | | |
| ***β*** |  |  |  |
| ***γ*dane=**  **180°-( *α+β*)** |  |  |  | ***γ*obl.** | |  |  |  | |

Obliczenie liniowego wcięcia w przód za pomocą symboli rachunkowych

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Szkic, obliczenie bazy *P*  *a b*  *B* *A* Obliczenie *dAB =c* ze współrzędnych:  *Δx* = m ; *Δy* = m  ***dAB = c* =**............ ........**m** | | | | | FORMA RACHUNKOWA NA **LINIOWE WCIĘCIE W PRZÓD** | | | | | | | | | |
| ***XA*** |  | | | ***YA*** |  | ***XB*** |  | ***YB*** |  |
| **-4*P*** |  | | | ***Cb*** |  | **+4*P*** |  | ***Ca*** |  |
| ***A*** |  | | | ***B*** |  | ***C*** |  | **Nr pt.** |  |
| Wzory : (*XP,YP)=* | | | | | | ***XP*** |  | ***YP*** |  |
| **Długość** | *m* | *cm* | Kwadraty boków | | | Karnotiany | |  | | | Kontrola: Obliczenie długości boków wcinających ze współrzędnych:  *BP = a =..................................*m  *AP = b =..................................*m | | | |
| ***a******=******dBP*** |  |  | ***a2*** |  | | ***Ca*** |  |
| ***b******=******dAP*** |  |  | ***b2*** |  | | ***Cb*** |  | *Ca = – a2+b2+c2*  *Cb =+a2– b2+c2*  *Cc =+a2+b2– c2* | | |
| ***c******=******dAB*** |  |  | ***c2*** |  | | ***Cc*** |  |
| Suma: | | |  | | |  | |

Obliczenie wcięcia wstecz za pomocą symboli rachunkowych

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Szkic:  *β*  *α2*  ***A* *B***  ***C***  *α1*  *P* | | | FORMA RACHUNKOWA NA **WCIĘCIE WSTECZ punktu nr** ........ | | | | | | | | | | | | |
| **Δ*xAB*** | | | |  | | | **Δ*yAB*** |  | **Δ*xAC*** |  | **Δ*yAC*** |  |
| **ctg *α1*** | | | |  | | | **+1** | *+1* | **–ctg *α2*** |  | **–1** | *–1* |
| ***f1*** | | | |  | | | ***f2*** |  | **Δ*xAP*** |  | **ΔyAP** |  |
| ***F*0** | | | |  | | | **+1** |  | ***XP*** |  | ***YP*** |  |
| **Ozn.pkt.** | ***X*** | ***Y*** | | Kąty g c cc  ° ′ ″ | | | | | Wzory: | | | Kontrola: Obliczenie kątów ze współrzędnych    *α1obl.*=.........................*α2obl.*=............................ | | | |
| A |  |  | | ***α1*** |  |  | |  |
| B |  |  | | ***α2*** |  |  | |  | Δ*yAP= – F*0⋅Δ*xAP* | | |
| C |  |  | | ***β*** |  |  | |  |