

en(A)

Twenty-second International Linguistics Olympiad

Taipei (Taiwan), July 20–27, 2025

Individual Contest Solutions

Problem 1.

		1	2	3	4	5	6	7	8	9
[k]	k	ci	pi	sum	zi	ŋa	du	dyn	ge	gu
	10(+k)	cu-	cu-	cu-	cy-	ce-	cu-	cup-	cop-	cy-
(k)	$k \times 10$	cutām	pi-	sum-	zip-	ŋap-	duk-	dyn-	gep-	(gup-)
(k)	$k \times 10 (+ \dots)$		tsa-	so-	ze-	ŋa-	(re-)	døn-	ja-	(go-)

- System A:

- $\beta \times 20 (+ \alpha) = \text{ke } \boxed{\beta} (\text{da } \boxed{\alpha})$
 - $\beta \times 20 + 10 \rightarrow \text{ke pje-da } \boxed{\beta + 1}$
 - $\beta \times 20 + 15 \rightarrow \text{ke ko-da } \boxed{\beta + 1}$
 - $\gamma \times 400 (+ \beta \times 20 + \alpha) = \text{piçu } \boxed{\gamma} (\text{da ke } \boxed{\beta} \text{ da } \boxed{\alpha})$
 - $\gamma \times 400 + 200 \rightarrow \text{piçu pje-da } \boxed{\gamma + 1}$
 - $\gamma \times 400 + 300 \rightarrow \text{piçu ko-da } \boxed{\gamma + 1}$

- System B:

- $\beta \times 10 = \textcircled{B}-\textbf{cu}$, $\beta > 2$;
 - $\beta \times 10 = \textcircled{B}-\textbf{çu}$, $\beta = 2$
 - $\beta \times 10 + \alpha = \textcircled{B}-\boxed{\alpha}$
 - $\gamma \times 100 (+ \omega) = \textcircled{Y}-\textbf{ja } \omega$

(a) $[X] = 60 = \text{dukcu}$
 $[Y] = 62 = \text{ke sum da pi}$
 $[Z] = 885 = \text{piçu pi da ke zi da ña}$

(b) (1) $13 + 70 = 83$
(2) $800 = 20 \times 40$
(3) $469 = 50 \times 9 + 19$
(4) $600 + 110 = 500 + 210$
(5) $2 \times \frac{3}{4} + \frac{1}{2} = 2$
(6) $1100 \times \frac{1}{2} + 50 = 600$
(7) $736 = 84 \times 4 + 400$
(8) $2 \times 609 = 60_X \times 20 + 18$
(9) $62_Y + 24 = 86$
(10) $885_Z + 115 = 700 + 300$

(c) • $75 = \text{ke ko-da zi} = \text{døn} \boxed{\text{ŋa}}$
• $570 = \text{piçu ci da ke pje-da gu} = \text{ŋap} \boxed{\text{ja}} \text{ dyn} \boxed{\text{nu}}$