

**Problem #2.**

	Umbu-Ungu		Umbu-Ungu
1	<i>telu</i>	24	<i>tokapu</i>
2	<i>talu</i>	$48 = 24 \times 2$	<i>tokapu talu</i>
3	<i>yepoko</i>	$72 = 24 \times 3$	<i>tokapu yepoko</i>
12	<i>rurepo</i>	$\alpha \neg \beta := (\alpha - 4) + \beta,$	$\alpha\text{-nga } \beta$
16	<i>malapu</i>	$\alpha \in \{12, 16, 20, 24, 28, 32\},$	
20	<i>supu</i>	$\beta \in \{1, 2, 3\}$	
24	<i>tokapu</i>	$\gamma + \delta,$	$\gamma \delta$
28	<i>alapu</i>	$\gamma = 24k, k \in \{1, 2, 3\},$	
32	<i>polangipu</i>	$9 \leq \delta \leq 32, \delta \neq 24$	

- (a)  $tokapu polangipu = 24 + 32 = 56,$   
 $tokapu talu rureponga telu = 24 \times 2 + 12 \neg 3 = 57,$   
 $tokapu yepoko malapunga talu = 24 \times 3 + 16 \neg 2 = 86,$   
 $tokapu yepoko polangipunga telu = 24 \times 3 + 32 \neg 1 = 101.$
- (b)  $13 = 16 \neg 1 = malapunga telu,$   
 $66 = 24 \times 2 + 20 \neg 2 = tokapu talu supunga talu,$   
 $72 = 24 \times 3 = tokapu yepoko,$   
 $76 = 24 \times 2 + 28 = tokapu talu alapu,$   
 $95 = 24 \times 3 + 24 \neg 3 = tokapu yepoko tokapunga yepoko.$

**Problem #3.**

	1st person sg	1st person pl	2nd person sg	2nd person pl	3rd person sg	3rd person pl
A	<i>nau-</i>				<i>du-</i>	<i>ditu-</i>
B	<i>natzai-</i>	<i>gatzaiyki-</i>			<i>zai-</i>	<i>zaizki-</i>
Z	<i>-t</i>	<i>-gu</i>	<i>-zu</i>	<i>-zue</i>		<i>-te</i>

  

	A	B	Z	
<i>ahaztu</i>	— about whom —		who	forgot
<i>hurbildu</i>		who	whom	approached
<i>lagundu</i>	whom		who	helped
<i>mintzatu</i>		who	to whom	talked
<i>ukitu</i>	whom		who	touched

- (a)
- |                           |   |                      |                              |                      |
|---------------------------|---|----------------------|------------------------------|----------------------|
| <i>ahaztu ditut</i>       | } | I forgot them        | <i>lagundu dute</i>          | they helped him      |
| <i>ahaztu zaizkit</i>     |   |                      | <i>lagundu nauzue</i>        | you(pl) helped me    |
| <i>ahaztu zaizu</i>       |   | you(sg) forgot him   | <i>mintzatu natzaizu</i>     | I talked to you(sg)  |
| <i>hurbildu natzaizue</i> |   | I approached you(pl) | <i>mintzatu gatzaiykizue</i> | we talked to you(pl) |
| <i>hurbildu zait</i>      |   | he approached me     | <i>mintzatu zaizkigu</i>     | they talked to us    |
| <i>lagundu ditugu</i>     |   | we helped them       | <i>ukitu ditugu</i>          | we touched them      |
| <i>lagundu dituzu</i>     |   | you(sg) helped them  | <i>ukitu naute</i>           | they touched me      |
- (b) you(sg) touched me — *ukitu nauzu*, they approached me — *hurbildu zaizkit*.
- (c) *lagundu dut* — I helped him, *hurbildu gatzaiykizu* — we approached you(sg).
- (d) you(sg) forgot him (*ahaztu zaizu*) — *ahaztu duzu*.