

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*.