

## (B) The Pame Game (1/3) [20 points]

The languages Northern and Central Pame belong to the Oto-Pamean branch of the Oto-Manguean language family. They are spoken in separate states of Mexico by approximately 5620 and 4350 people, respectively. Like all languages belonging to the same family, they have preserved some features of the proto-language (the common ancestor language of the family) but have changed in other features, making the languages similar yet different from one another. These differences can be in both the structure of the grammar and in the pronunciation of words. To help you know how words in these languages are pronounced, the following key is given to the pronunciation of the symbols:

t	voiceless alveolar plosive (the first sound in English <i>tea</i> )
d	voiced alveolar plosive (the first sound in English <i>do</i> )
n	voiced alveolar nasal (the first sound in English <i>new</i> )
s	voiceless alveolar fricative (the first sound in English <i>see</i> )
r	voiced alveolar flap (the sound made by the <i>r</i> in the Spanish word <i>pero</i> )
l	voiced alveolar lateral (the first sound in English <i>lead</i> )
tʃ'	voiceless alveolo-palatal ejective affricate (similar to the first sound in English <i>chew</i> )
ɲ	voiced alveolo-palatal nasal (similar to the <i>ny</i> sound in <i>canyon</i> )
k	voiceless velar plosive (the first sound in English <i>key</i> )
g	voiced velar plosive (the first sound in English <i>goo</i> )
k'	voiceless velar ejective (similar to the first sound in English <i>key</i> )
ʔ	voiceless glottal plosive (the sound between the vowels in English <i>uh-oh</i> )
h	voiceless glottal fricative (the first sound in English <i>he</i> )
a	low unrounded vowel (similar to the sound in English <i>ah</i> )
e	mid front unrounded vowel (similar to the sound in English <i>eh</i> )
i	high front unrounded vowel (the first sound in English <i>eat</i> )
o	mid back rounded vowel (similar to the sound in English <i>oh</i> )
u	high back rounded vowel (the first sound in English <i>oops</i> )
ĩ	high front unrounded vowel produced with glottal fry
ũ	high back rounded vowel with nasal airflow



## (B) The Pame Game (2/3)

Some numbers from Northern Pame are given below:

9 = kara tenhiun sante
13 = kara tenhiun gitʃʼaj
17 = kanuje tenhiun sante
20 = kanuje tenhiun giriuj
26 = karnuʔ tenhiun nuji
30 = karnuʔ tenhiun tiria
35 = giriuj tenhiun rnuʔ

Here are some arithmetic equalities in Central Pame (note that  $\times$  means multiplication):

(1) nda ntsawʔ + seskaʔai nda ntsawʔ nda = nda lien tilipũhũŋ
(2) kijui + nda ntsawʔ = seskaʔai nui
(3) nda lien nda $\times$ nui = nui lien nui
(4) tilipũhũŋ + kikʼai = tilija $\times$ nui
(5) seskaʔai ranhũʔ $\times$ ranhũʔ = nda lien seskaʔai nda ntsawʔ nda
(6) seskaʔai kikʼai + kikʼai = nui $\times$ seskaʔai
(7) kikʼai + ranhũʔ = nda ntsawʔ
(8) nda + nui = ranhũʔ

**B1.** Given that the following equality is satisfied:

Northern Pame	Central Pame
(9) teriuhij $\times$ kara tenhiun nuji	= ranhũʔ lien seskaʔai

a. Convert the following Northern Pame numbers to numerals:

nuji =

karnuʔ tenhiun teriuhij =



## (B) The Pame Game (3/3)

b. Write out the following numbers in Central Pame:

1 =

3 =

9 =

56 =

60 =

