

Kazakh

Several phrases have been translated into Kazakh (written in Roman script here), but the translations are given in random order. Some of the words are missing.

- | | | |
|------------------------|----------|-----------------|
| a. one and five | ___i. | ___ ben elüw |
| b. one and eight | ___ii. | bir men bes |
| c. three and two | ___iii. | bir ___ segiz |
| d. four and seven | ___iv. | elüw eki men on |
| e. seven and fifty | ___v. | ___ men elüw |
| f. eight and fifty | ___vi. | otız ben ___ |
| g. thirteen and thirty | ___vii. | tört pen žeti |
| h. thirty and two | ___viii. | üş ___ eki |
| i. fifty-two and ten | ___ix. | on üš pen otız |

1. Match each phrase with its correct translation and supply the missing words.

2. Translate into Kazakh:

- | | |
|--------------------------|-------|
| a. five and thirty-eight | _____ |
| b. ten and four | _____ |
| c. seven and fifty-three | _____ |
| d. thirty-eight and five | _____ |

Note: **i, ö, ü, ı** are specific Kazakh vowels. The letter **ž** has the sound of *z* in the word *usual*.

! Kazakh language belongs to the Central Turkic groups of languages. It is the official language and principle native language of the Republic of Kazakhstan. It is spoken by about 6,5 million people in Kazakhstan and about 1,5 million people southern Siberia, northwestern China and northwestern Mongolia.

Problem by Pyotr Zubkov
for the Moscow Traditional Olympiad of Linguistics 2002/2003

Taikyoku Shōgi

Japanese Chess (*Shōgi*), played on a board of size 9 by 9 and with a total of 40 men, is the most popular intellectual game in contemporary Japan, where it entertains between 10 and 20 million people. But between the 8th and 18th century many other variants of the game were invented in that country, some on smaller and some on larger boards.

The largest of all Japanese chess games (and generally the largest chess game in history) is *Taikyoku Shōgi* (more or less “Ultimate Chess”), in which the board is of size 36 by 36 (or 1296 squares in all) and every player has in the beginning an army of 402 men of 208 different types.

This is a table which contains the names of some of the men in *Taikyoku Shōgi* (in Japanese and in English translation), as well as the name of the man to which each of them promotes upon reaching one of the farthest 11 ranks of the board.

	Initial value		Promoted value
1.	_____ “Running Stag”	⇒	<i>honroku</i> _____
2.	_____ _____	⇒	<i>tōshō</i> “Sword General”
3.	<i>gyūhei</i> “Ox Soldier”	⇒	_____ _____
4.	_____ “Right General”	⇒	<i>ugun</i> _____
5.	_____ “Ox General”	⇒	<i>hongyū</i> _____
6.	<i>kyūhei</i> “Bow Soldier”	⇒	_____ “Bow General”
7.	<i>kisho</i> “Wood General”	⇒	_____ _____
8.	<i>dohei</i> “Crossbow Soldier”	⇒	_____ _____
9.	_____ _____	⇒	_____ “Dashing Horse”
10.	_____ “Left Chariot”	⇒	_____ _____
11.	_____ “Horse Soldier”	⇒	<i>sōba</i> _____
12.	<i>sōyū</i> “Running Bear”	⇒	_____ “Dashing Bear”
13.	<i>tonshō</i> “Pig General”	⇒	<i>honton</i> _____
14.	<i>tesshō</i> _____	⇒	<i>hakuzō</i> “White Elephant”
15.	_____ _____	⇒	<i>sagun</i> “Left Army”
16.	<i>usha</i> _____	⇒	<i>utessha</i> “Right Iron Chariot”
17.	_____ _____	⇒	<i>honrō</i> “Dashing Wolf”
18.	<i>sekishō</i> “Stone General”	⇒	_____ “White Elephant”

Fill the gaps.

Note: A bar above a vowel letter indicates length.

Problem by Ivan Derzhanski
for the Moscow Traditional Olympiad of Linguistics 2002/2003

Tupí and Guaraní

The Tupi-Guarani language family, widespread in the lowlands of South America, was very important in the history of the colonization of the continent. Among them, the most famous languages are Tupinambá (*old Tupi*), spoken along the Portuguese coast in the colonial times, and Guaraní, still spoken today in southern Brazil, Argentina, Uruguay and Paraguay (being co-official in the later). The table below shows some words in Tupinambá, their translations to English and their correspondents in Guaraní Mbya, one of the forms of the Guaraní language.

English	Tupinambá	Guaraní Mbya	English	Tupinambá	Guaraní Mbya
rock	itá	itá	to beat	petek	_____
soil	ybý	yvý	to hear	senub	_____
water	y	y	red	pyranga	_____
black	un	ũ	lizard	teju	_____
head	akanga	akã	I say	a'é	_____
to bring	erur	eru	beautiful	porang	_____
to hear	endub	endu	mouth	_____	juru
to experiment	sa'ang	ha'ã	half	_____	ku'a
you want	erepotár	erepotá	wood	_____	yvyrá
to heal	pueráb	kuerá	you stay	_____	erepytá
I sleep	aker	aké	high	_____	yvaté
boss	ubixab	_____	_____	_____	ereké
rib	arukang	_____	_____	jaguar	_____
to overcome	opuan	_____	_____	_____	potá
peanut	mandubi	_____			

1. Fill the blank spaces.

2. Below there are names of several cities in Brazil that are of Tupi origin, and their meanings in no particular order. Match the correspondences between the columns.

- | | |
|----------------------------|---|
| 1. Ibiúna (SP) | ___ (a) white soil |
| 2. Ibiporanga (SP) | ___ (b) great river |
| 3. Iúna (ES) | ___ (c) place for producing fishing hooks |
| 4. Tijuípe (BA) | ___ (d) lizard river |
| 5. Pindamonhangaba (SP) | ___ (e) red river |
| 6. Jacarecoara (MA) | ___ (f) turtle's burrow |
| 7. Ibitinga (SP) | ___ (g) sound the water does in the rock |
| 8. Jericoaquara (CE) | ___ (h) great rock |
| 9. Ipiranga (PR) | ___ (i) alligator's/yacare's burrow |
| 10. Tijuaçu (BA) | ___ (j) black soil |
| 11. (Usina de) Itaipú (PR) | ___ (k) black river |
| 12. Itatinga (SP) | ___ (l) fish of the yellow river |
| 13. Itauçu (GO) | ___ (m) beautiful land |
| 14. Pirajuí (SP) | ___ (n) big lizard |
| 15. (Foz do) Iguaçu (PR) | ___ (o) white rock |

Note: **y** represents the closed central unrounded vowel [ɨ]. **b** represents the bilabial fricative consonant [β]. **‘** represents the glottal pause [ʔ], like the pause in *uh-oh*.

Inuktitut Numbers

Inuktitut is one of the main languages of the Inuit people, which lives in several areas in the northern Canada and Alaska. Few years ago, students from a school in the small town of Kaktovik invented a new way of writing numbers, more appropriate for the way numbers are expressed in the Inuktitut language.

Imagine that you are travelling through northern Canada and find some Inuit students that know nothing about English, Latin script or Indo-Arabic numerals. Then, in order to start communication, one of the students offer you a list of mathematical operations, shown below (in the left column). This version of the table uses the Indo-Arabic symbols for the operations.

$$\backslash + \backslash = \vee$$

$$\vee + \vee = \text{—}$$

$$\overline{W} + \nabla = \overline{\text{—}}$$

$$\overline{\vee} - \vee = \overline{=}$$

$$\vee \times \text{—} = \overline{=}$$

$$\overline{W} \times \nabla = \vee \vee$$

$$W\delta + \overline{\text{—}} = W\overline{\text{—}}$$

$$\vee + \vee =$$

$$\delta \times \text{>>>} =$$

$$\backslash \delta - \vee =$$

$$\text{—} \times \text{—} =$$

$$\overline{\vee} - \vee =$$

$$\backslash \nabla + \backslash \overline{W} =$$

$$\nabla \div \vee =$$

1. Seeing that you understood the table, the student challenges you to write down the answers of another series of operations, shown in the right column. Give the answers in Inuktitut numerals.
2. To assure the student that you understood the system, you decided to write down the date of today (day, month and year) in Inuktitut numerals, assuming they used Gregorian calendar. What did you write down?

Basque Numbers

Several multiplications have been written out in Basque. There are gaps in the last two lines.

$$\text{bi} \times \text{bi} = \text{lau}$$

$$\text{bi} \times \text{bost} = \text{hamar}$$

$$\text{bi} \times \text{hamar} = \text{hogei}$$

$$\text{hiru} \times \text{bost} = \text{hamabost}$$

$$\text{hiru} \times \text{hamar} = \text{hogeita hamar}$$

$$\text{bost} \times \text{bost} = \text{hogeita bost}$$

$$\text{bost} \times \text{zazpi} = \text{hogeita hama}$$

$$\text{bost zazpi} \times \text{bederatzi} = \text{hirurogeita hiru}$$

$$\text{zazpi} \times \text{hamar} = \text{hirurogeita hamar}$$

$$\text{lau} \times \text{bost} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \times \text{hamar} = \text{laurogeita hamar}$$

1. Fill in the gaps.

2. Write in figures:

a) laurogeita hamahiru =

b) hirurogei =

3. Write out in Basque:

c) 39 =

d) 77 =

e) 80 =

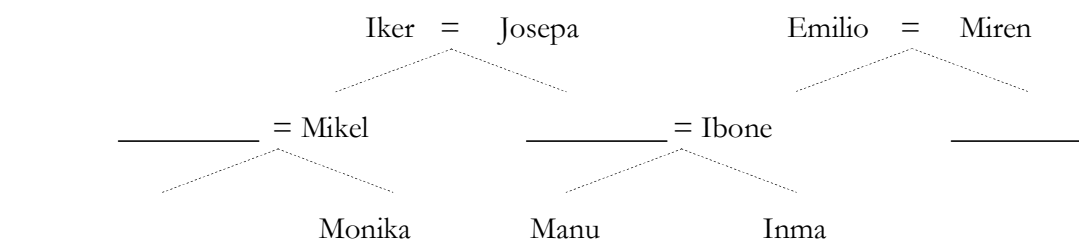
Note: The letter *s* has the sound of English *sh*, *z* of *s*, *tz* of *ts* in cats. The letter *h* is mute.

! Basque is spoken by 500,000 to 600,000 people in France and Spain and by about 170,000 people in South America. It has not been proven to be related to any other language.

Problem by Anna Pazelskaya
for the Moscow Traditional Olympiad of Linguistics 2001/2002

Basque Kinship

This is the genealogical tree of a Basque family. The blank spaces in the diagram stand for the names Ines, Kontxi, Felix, and Andres (listed here in no particular order).



Some of the relationships between the members of this family are described below in Basque:

Ines Mikelen emaztea da.

Andres Iboneren neba da.

Monika Kontxiren ahizpa da.

Ibone eta Felix senar-emazteak dira.

Inma Manuren arreba da.

Andres eta Ibone Emilioren seme-alabak dira.

Iker Joseparen senarra da.

Manu Iboneren semea da.

Mikel Felixen anaia da.

1. Identify the names that belong in the blank spaces in the diagram.
2. Is Kontxi male or female? Explain, using the data from the problem.
3. Fill in the gaps in the following Basque sentences (referring to the same family):

- a) Kontxi _____ ahizpa da.
- b) Inma eta Manu Iboneren _____.
- c) Ibone Andresen _____.
- d) Manu Inmaren _____.
- e) Kontxi Mikelen _____.
- f) Emilio _____ senarra da.

Note: *Ibone*, *Ines*, *Inma*, *Josepa*, *Miren*, and *Monika* are women's names; *Andres*, *Emilio*, *Felix*, *Iker*, *Manu*, *Mikel* are men's names. The letters **s** and **x** stand for sounds similar to English *sh*; **z** has the sound of English *s*, **tx** of English *ch*, **j** is a sound intermediate between *g* and *y*; **h** is mute.

Icelandic Kinship

Guðrún Eriksdóttir Hrafnhildardóttir and Jakob Christiansson had three kids, from which they are very proud, for their successes and for all of them have given them grandsons or granddaughters. In order to celebrate their 70th wedding anniversary, the long-lived couple had a party with all their descendants: sons and daughters, grandsons and granddaughters, great-grandsons and great-granddaughters. Naturally, some of their sons-in-law and daughters-in-law, as well as grandsons-in-law and granddaughters-in-law, were also invited. Here is the list of all the people in the party:

Christian Kristínsson	Margret Steinunnardóttir Jakobsdóttir
Daniel Guðrúnarson Jakobsson	Ragnheiður Jakobsdóttir
Daniel Steinunnarson Þorarinssonar	Rakel Ragnheiðardóttir Bergmann
Eva Emilsdóttir Kvaran	Robert Bergmann Gunnarsson
Gunnar Gunnarsson	Sara Jakobs Þorarinssonar
Hrafn Kristínsson Viktorsson	Sigurður Jóns Bergmann
Ingimundur Sigurðarson Bergmann	Stefan Gunnarsson Gunnarssonar
Jakob Þorarinsson	Steinunn Jakobsdóttir
Jón Oddsson Bergmann	Viktor Danielsson Jakobssonar
Kristín Guðrúnardóttir Aronsdóttir	Viktória Viktorsdóttir

1. Among the participants, who is the older descendant of an immigrant?

2. Which of the sons/daughters of Guðrún and Jakob has no grandsons/granddaughters?

3. How many kids had Viktor? _____
4. How many kids had Steinum? _____
5. Which of the sons/daughters of Rakel didn't inherit any of her surnames?

6. Write five possibilities of name and surname for the son that Eva and Christian are waiting, knowing that his first name will be the same as the father of the pop singer Björk Guðmundsdóttir.

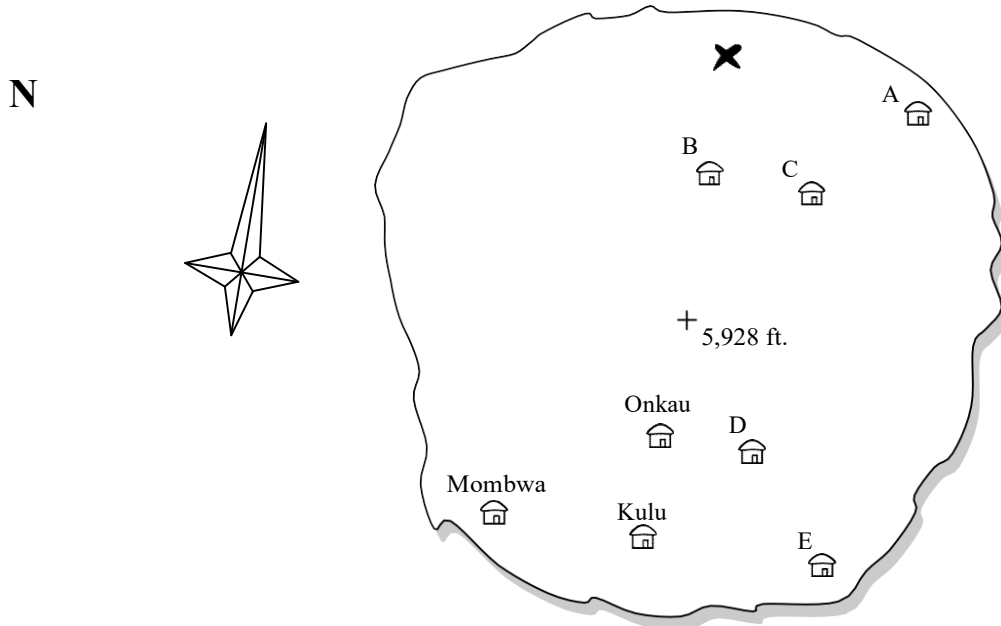
7. Steinunn liked very much his grandmother (mother of her mother), so that she gave her name to the daughter she had with Björn Annasson, before she married with her present husband. Give two possibilities for the name of this girl.

Note: **j** is pronounced as y in *you*; **Ð** and **ð** are pronounced as *th* in *this*.

Problem by Robson Carapeto
for the Brazilian Linguistics Olympiad 2013

Manam

Manam Pile (“Manam Talk”) is a Malayo-Polynesian language spoken on Manam Island off the coast of Papua New Guinea. Manam is one of the most active volcanoes in the world, and during violent eruptions the population must be evacuated to the mainland.



Below, a Manam islander describes the relative locations of the houses above.

1. Onkau pera kana auta ieno, Kulu pera kana ilau ieno.
2. Mombwa pera kana ata ieno, Kulu pera kana awa ieno.
3. Tola pera kana auta ieno, Sala pera kana ilau ieno.
4. Sulung pera kana awa ieno, Tola pera kana ata ieno.
5. Sala pera kana awa ieno, Mombwa pera kana ata ieno.
6. Pita pera kana ilau ieno, Sulung pera kana auta ieno.
7. Sala pera kana awa ilau ieno, Onkau pera kana ata auta ieno.
8. Butokang pera kana awa auta ieno, Pita pera kana ata ilau ieno.

1. Onkau’s, Mombwa’s, and Kulu’s houses have already been located on the map above. Who lives in the other five houses?

A: _____ B: _____ C: _____ D: _____ E: _____

2. Arongo is building his new house in the location marked with an X. In three Manam Pile sentences like the ones above, describe the location of Arongo’s house in relation to the three closest houses.

Guaraní Verbs

The following Guaraní verb forms are listed along with their English translations.

<i>japyhyta</i>	We will be catching	<i>noñe'ëi</i>	He is not talking
<i>nohyvykõi</i>	He is not enjoying	<i>okororõ</i>	He is crying
<i>ombokapu</i>	He is shooting	<i>ndajajupirima</i>	We were not waking up
<i>pemomaitei</i>	You are greeting	<i>ahyvykõima</i>	I was enjoying
<i>ndokarumo'ãi</i>	He will not be eating	<i>añe'ëta</i>	I will be talking
<i>ndapevo'oima</i>	You were not taking	<i>namomaiteiri</i>	I am not greeting
<i>napekororõmo'ãi</i>	You will not be crying	<i>japurahei</i>	We are singing

1. Translate into English.

- a) *akaruma* _____
- b) *ojupita* _____
- c) *ndavo'omo'ãi* _____
- d) *napekororõi* _____
- e) *ndapyhyima* _____

2. Translate into Guaraní.

- f) You are not shooting _____
- g) He is not singing _____
- h) We will be eating _____
- i) I will not be singing _____

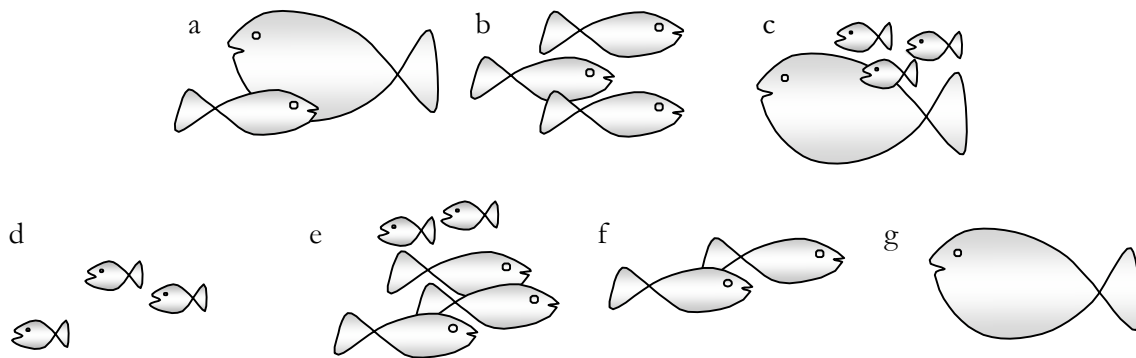
Notes: “you” is always plural in the sentences above. A squiggle over a vowel indicates that it is nasal (pronounced partly through the nose). The letter ñ is pronounced like the sound in the middle of “piñata” or “onion”. The letter y is pronounced like the “u” in “cut”. The letter j and the apostrophe (') are specific consonants. Guaraní is one of the official languages (along with Spanish) of Paraguay, where it is spoken by 94% of the population.

Problem by Bozhidar Bozhanov
for the North American Computational Linguistics Olympiad 2009

Aymara

Aymara is a South American language spoken by more than 2 million people in the area around Lake Titicaca, which, at 12,507 feet above sea level, is the highest navigable lake in the world. Among the speakers of Aymara are the *Uros*, a fishing people who live on artificial islands, woven from reeds, that float on the surface of Lake Titicaca.

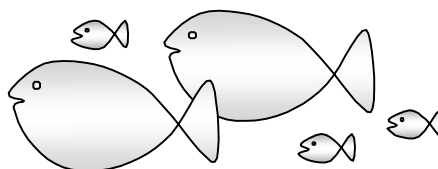
1. Below, seven fishermen describe their catch. Who caught what?



- ___ 1. “Mä hach’a challwawa challwataxa.”
- ___ 2. “Kimsa hach’a challwawa challwataxa.”
- ___ 3. “Mä challwa mä hach’a challwampiwa challwataxa.”
- ___ 4. “Mä hach’a challwa kimsa challwallampiwa challwataxa.”
- ___ 5. “Paya challwallawa challwataxa.”
- ___ 6. “Mä challwalla paya challwampiwa challwataxa.”
- ___ 7. “Kimsa challwa paya challwallampiwa challwataxa.”

Also, watch out! *One of the fishermen is lying.*

2. Your daily catch is pictured below. Describe it in Aymara, and don’t lie!



Note: *ä* is a long *a*; *ll* is pronounced as *ly*; *x* as the *ch* in Scottish *loch*. Some vowels transcribed here are deleted in actual speech.

Toki Pona

Toki Pona is a constructed language, created in 2011 by the Canadian linguist Sonja Elen Kisa. Her aim was the language to be a minimal language, undervaluing the empty and abstract communication such as the ones of politicians and bureaucrats and pointing more directly to the concrete human life experiences. Therefore, the language makes use of only 123 words, with roots coming from different language families.

What follows is a list of some words and expressions in Toki Pona and, out of order, their English translations:

kiwen suno jelo, tomo tawa telo, jan Powi, ilo suno, telo jelo, jan ilo, jan toki, supa lape,
supa moku, ma tomo, wile moku, tawa, nasin linja, wile pona, telo kiwen, lipu toki, wile lawa,
linja lawa, tomo moku, linja kiwen

prophet, well-intentioned, hair, lantern, ice, robot, boat, thorn, hungry, Boris, book,
piss, city, bed, orthodoxy, movement, restaurant, dominant, dinner table, gold

1. Do the right associations between the words and translations.
2. Give the translation of all the simple Toki Pona words used in the compounded words and expressions of this problem.
3. How would you translate literally the name of the language?