

An introduction to Sumerian Cuneiforms

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Chapter 1

Ur-Nammu-9

The cuneiform script was the first writing system invented by humankind. Therefore, all educated individuals should learn this 5,000-year-old script. In this tutorial, we will learn how to read Sumerian cuneiform.



There are few grammar books for Sumerian. Unfortunately, Marie-Louise Thomsen's "**The Sumerian Language**" does not use cuneiform, so I cannot recommend it. This leaves us with John Hayes' Manual of Sumerian and Joshua Bowen's "**Learn to Read Ancient Sumerian**". Therefore, I advise you to buy "**A Manual of Sumerian: Grammar and Texts**" by Hayes to learn this ancient language in depth. It is also a good idea to acquire "**Learn to Read Ancient Sumerian**" by Joshua Bowen and Megan Lewis.

1.1 Disclaimer

The authors of this book are not a scholars in Sumerian studies in any sense. Therefore, they may not help serious students of cuneiforms to solve their pendencies and questions.

For scholars and graduate students who are writing their thesis, the authors recommend John Hayes' **Manual of Sumerian** and Joshua Bowen's **Learn to Read Ancient Sumerian**. Hayes' manual strong points are inscriptions and dedicatories, while Bowen and Lewis prefer literary texts.

1.2 Sentence structure

To discuss grammar, scholars use a transliteration of Sumerian cuneiforms to the Latin alphabet. Below, you will find the transliteration of the Ur-Nammu-9 document that we will study in this lesson.




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1- [nanna
2-     lugal.ani].{(r)} #dat           -- For his king
3- [ur-nammu           -- Ur-Nammu,
4-     lugal.urim.{ak}].{e} #gen/erg  -- the king of UR,
5- [e2.ani].{} #object               -- his temple
6- mu.na.du3 #verb                 -- he built
7- [bad3.urim5.{a(k)}].{} #gen/obj   -- the city wall of Ur
8- mu.na.du3 #verb                 -- he built

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1.3 Grammar functions in transliteration

In the transliteration, grammar functions are represented by indicators between braces. In the example, the grammar functions are:

- 1,2 The benefactive has an unwritten “(r)”, which is represented by {(r)}
- 3,4 The genitive ends in {ak} after consonant; the ergative ends in {e}
- 5 The object of the action has no ending, which is represented by {}
- 7 The genitive has an unwritten “(k)”, which is represented by {a(k)}
- 8 The verbal chain  (tr mu na du3) starts with the ventive prefix , followed by a cross-reference  (tr na) to the dative.

Square brackets delimit a noun chain, i.e., a noun followed by a sequence of limiting qualifiers that may contain adjectives, apositives and a genitive. Example: [ur-nammu lugal.urim5.{ak}].{e} means

[Ur-Nammu, Ur's king].{task-doer}

After the close square bracket, a braced symbol suffix indicates the function of the noun chain. For instance, .{e} shows that [ur.nammu...].{e} is the doer of the sentence's task. The {(r)} symbol shows that [nanna...].{(r)} receives the benefits of the task: [God Nanna].{benefactive}.

The noun chain may contain a genitive, as was stated in the previous paragraph. If you don't know the role of a genitive, it is a grammar function that shows possession. In English, the Saxon genitive marks the possessor with ['s] and comes before the noun: *Ur's king*. In Sumerian, the possessor follows the noun and is marked with {ak} after consonant and {k} after vowel: {urim5 ma}.{k} is equivalent to *Ur's king*.

Braces represent the grammatical function endings. For instance, the ergative function-ending represents the doer of the task and is written as {e} #erg, where #erg is a comment that will be omitted in more advanced lessons. The person who receives the benefit of the action is called dative and is represented as {ra} #dat, where the #dat comment is usually omitted.

The empty ending of the object is commented as {Ø} #obj or simply as {} #obj. In the example, the objects are the constructions of king Ur-Nammu:

[e2 a ni].{} -- his temple
 [[bad3.urim5].{a(k)}].{} -- the city wall of Ur

Unwritten endings are placed between parentheses, such as {(r)}.

1.4 Line 1 & 2

The Ur-Nammu 9 document is divided into eight lines.




^dnanna



lugal



a ni

(tr an nanna lugal a ni)

For the god Nanna, his master,

   (^dnanna) the god Nanna

  (lugal) king, master

  (a ni) his

In the first line, the text  is written, which is the Sumerogram for the name of Nanna, the god of the Moon. The  symbol is read as **an** (or **digir**) and is determinative for deity. We will learn in the next paragraph that this word is in the dative case; therefore, the translation of the rectangle is “*For Nanna.*”

Sumerian uses symbols, called determinatives, to make the meaning clearer. The star  in front of a god’s name is the determinative of divinity. In transliteration, the determinatives are represented as a superscript letter, such as ^dnanna.

The Emacs command (tr an nanna lugal a ni) is used to typeset Sumerian. There are instructions about this command on the page where you found this tutorial.

1.5 Line 3 & 4

The third line of the Ur-Nammu-9 document contains the name of Ur-Nammu () , the king who rebuilt the temple of ^dNanna and is the document’s author. The king’s name is formed by  (ur), which means *man* or *dog*, and  (^dnanna), the Mother Earth of the Sumerians. Therefore, the king’s name, , means “*The Man of Nammu.*” Note that the determinative of deity () precedes the goddess’ name.

				
ur- ^d nammu	lugal	urim	ma	ke4
(tr ur nammu lugal urim ma ke4)				
<i>Ur-Nammu, the king of Ur,</i>				

 (ur-^dnammu) King Ur-Nammu
 (lugal) king, master
 (urim^{ki}) the city of Ur
 (ki) *determinative of places*
 (ma(k)) *dative after the consonant “M”*
 (ke4) *contraction of dative with ergative*
 (ma ke4) *genitive contracted with ergative*

The fourth line contains  (tr lugal urim2 ma ke4), where  (tr urim) represents the city that was the cult center of Nanna. It is formed by the Sumerograms (tr shesh) () and (tr unug) (). The Sumerogram  is the determinative for geographic names.

Determinatives, such as ✳️ (“digir” - deity) and 🏠 (“ki” - place), are not pronounced. Their role is to make the meaning of the word clearer.

The genitive case denotes possession. Unlike the dative, English has a genitive case, formed by an apostrophe followed by “s.” In English, one would say, “**Urim’s King.**” In Sumerian, the genitive follows the possessor and is marked with {ak} after consonants and {k} after vowels. In this nominal chain, the “a” of {ak} was assimilated with the previous consonant, becoming 🏠 (ma). The Sumerogram 🏠 (ke4) represents the {k} of the genitive and the {e} of the ergative.

Sumerian is an ergative language, meaning the agent of transitive actions is marked. In Sumerian, the ergative marker is {e}. However, the subject of an intransitive verb, like “to go” or “to sleep,” does not receive the {e} that marks the agent, whom linguists call ergative. Unmarked functions, such as the Sumerian subject of an intransitive verb and direct object of a transitive verb, are called absolutive and said to be marked with the null symbol {}. In short, for the Sumerians and modern Basques, if the subject of a sentence does not perform a task, it cannot be called ergative.

1.6 Line 5

The fifth rectangle introduces the temple (e2 - 🏠) that Ur-Nammu built. The expression 🏠 🏠 (e2 ani) means “*his temple.*” It is in the absolutive case and, therefore, receives the null symbol mark {}, a technical way of saying it does not bear a mark. The noun chain 🏠 🏠 (e2 ani) undergoes the consequences of the task performed. Thus, it is often called patient, accusative or target.

🏠 🏠 🏠

e2 a ni

(tr e2 a ni)

his temple

🏠 (e2) house, temple

🏠 🏠 (e2 me esh-pl) pl. houses, temples

🏠 🏠 (a ni) his

1.7 Line 6

A verbal stem prefixed by a sequence of particles and possibly followed by a suffix is called a *verbal chain*. The verbal chain  (mu-na-du3) can be translated as “*built*.”

  
 mu na du3
 (tr mu na du3)
he has built for the god

 (du3) to build, to make, to plant
 (mu) *conjugation prefix (CP), ventive prefix, here*
 (na) *cross-references the dative*

The verbal chain of the example has two prefixes and a stem:

Ventive Conjugation Prefix  (CP). The Ventive CP indicates that the action occurs here, close to the speaker.

Dimensional Prefix  (DP) cross-referencing the dative. Sumerian has a DP for each sentence component, except the ergative and the absolutive cases.

Verbal stem  *he has built*

1.8 Line 7 & 8

The noun phrase    (tr bad3 urim ma) means “*wall of Ur*.” The sumerogram  (tr bad3) means “*city wall*.” The {(k)} of the genitive is omitted, meaning it is not expressed because it was not pronounced at the end of a nominal phrase.

     
 bad3 urim ma mu na du3
 (tr bad3 urim ma mu na du3)
the city wall of Ur, he has built

 (ra) *dative ending*
 (na) *reference to dative*

1.9 Reading the brick

Let's read the whole brick inscription.

1. (tr an nanna) (𒀭𒂗𒍪) – *For the god Nanna...*
2. (tr lugal ani) (𒌦𒂗𒍪𒀭) – *his master*, // The word 'lugal' means king or master. It is formed from 'lu2,' (𒌦) which means 'man,' and 'gal,' (𒂗) which can be translated as 'great.' The expression 'a-ni' (𒀭𒍪) is equivalent to the possessive pronoun 'his.'
3. (tr ur-nammu) (𒌦𒂗𒍪) – *Ur-Nammu*,
4. (tr lugal urim ki ma ke4) (𒌦𒂗𒍪𒀭𒂗𒍪𒀭𒂗𒍪) – *the king of Ur*,
5. (tr e2 a ni) (𒂗𒍪𒀭) – *his temple*, // Remember that you already learned the meaning of 'a ni.'
6. (tr mu na du3) (𒄩𒂗𒍪) – *he has built*.
7. (tr bad3 urim ma) (𒂗𒍪𒀭𒂗𒍪) – *The wall of Ur*,
8. (tr mu na du3) (𒄩𒂗𒍪) – *he built for Nanna*.

1.10 Translation

The meaning of the whole document is something like this: *“For the god Nanna, his Master, Ur-Nammu, the King of Ur, built his temple. The king also built the city walls of Ur for Nanna.”*

1.11 The method

I will use the method I employed in this first chapter to introduce a few other documents. In other words, each chapter will contain grammar, vocabulary, syllables, and essential Sumerograms for reading a Sumerian document. This methodology ensures you can handle a manageable amount of information initially.

After discussing how to read a Sumerian inscription, each chapter contains an in-depth presentation of the Sumerian grammar. Initially, you can do without reading this final grammar section. You can return to it after practicing Sumerian with a few inscriptions.

1.12 Grammar notes

In the expression *transitive verb*, the word *transitive* means “affecting something or someone else.” Therefore, a transitive verb only makes sense if someone exerts the verbal action on an object. On the other hand, an intransitive verb makes sense without any object. In a few words, without an object to affect, the sentence constructed around a transitive verb does not seem complete:

The king built.

If you say something like that, people around you will ask: “What did he build?” Then you may answer:


 (tr nanna ra) (tr lugal e) (tr e2 tur) (tr mu na du3)
 (tr nanna ra lugal e e2 tur mu na du3)

The king built a small house for Nanna.

If you say that a man went out, nobody will ask for further information. Therefore, the verb “to go out” is intransitive.


 (tr lu2) (tr ba e3)
 (tr lu2 ba e3)

The man went out.

Here is the novelty: In Sumerian, any transitive verb can be turned into a transitive verb. Thus, let us consider the sentence below.


 (tr lugal e) (tr lu2) (tr mu un e3)
 (tr lugal e lu2 mu un e3)

The king expelled the man.

Now, the verb has an object, which changed the intransitive verb “to go out” into the transitive verb “to cause to go out.” This method of creating transitive verbs is called *causative construction*.

APPENDIX 1: Grammar notes

Congratulations. You have finished the first lesson. This appendix gives further details about the case elements, the noun chain and the verbal chain. If you don't feel like it, you don't need to read it now. You can return to this lesson after completing a few Sumerian documents.

1.13 Case elements

The subject of a sentence is the topic of the conversation. Besides the subject, the sentence may have other marked components called case elements. Case elements may have references in the verbal chain. The leading case elements with their marks and references are:

Ergative: {e} task doer



(tr lugal e bad3 urim ma mu na du3)

The king built the city wall of Ur.

Dative: {ra} / (-na-) for



(tr nin a ni ra lugal e bad3 urim ma mu na du3)

The king built the wall of Ur for his lady.

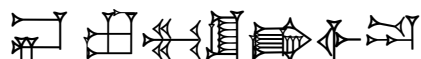
Locative: {a} // (-ni-) in, on



(tr lugal e uru a e2 mu ni du3)

The king built a house in the city.

Terminative: {še} // (-ši-) in order to



(tr ĝe26 uru ĝu10-my she-goal ga shi ĝen)

I will go there to my city.

Ablative: {ta} // (-ta-) or (-ra-) out of



(cn uru ta ba ta ĝen)

He went out from the city.

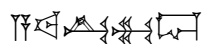
Comitative: {da} // (-da-) with



(tr lugal e dumu a ni da e2 mu un da du3)

The king built the house with his son.

Equitative: {gin} // (-gin-) like, as



(tr a ba shesh ĝu10-my gin-equitative)

Who is like my brother?

Absolutive: {∅} or {}



(tr nin a ni ra lugal e bad3 mu na du3)

For his lady, the king has built the city wall.

1.14 Dative conjugation

When used as a prefix to a verb, the dative takes different forms depending on the person and number it is referring to.

(-ma-) to me



(tr ĝe26 ra lugal e e2 mu ma du3)

The king built a house for me.

(-ra-) to you



(tr ze2 ra lugal e e2 mu ra du3)

The king has built a house for you.

(-na-) to him/to her



(tr nin ra lugal e e2 mu na du3)

The king has built a house for the lady.

(-me-) to us



(tr lugal e e2 mu me du3)

The king has built a house for us.


(-ne-) to them



(tr lugal e e2 mu ne du3)

The king has built a house for them.

1.15 Transitive verbs






A transitive verb describes an action that transitions from a subject to a direct object. In a transitive verb, the subject is the doer of the action and is called ergative, which is the Greek term for the person who performs a task. In Sumerian, the ergative is marked with  {e}.

The absolutive case is the entity that undergoes the consequences of a task. The absolutive case can be the person accused of a deed. In this case, it is called accusative.



The absolutive case can also be a target of a shooting. Or it can be the object of health care, in which case it is called patient by the doctors.

Some linguists call *patient* all kinds of absolutive cases of a transitive verb, while others prefer the term accusative.

In Sumerian, the absolutive case receives no mark, but the linguists say it is marked by the null symbol {Ø}.

The transitive verb itself comes last in a Sumerian sentence, and is described by a chain of affixes surrounding the stem. This verbal chain may contain a Modal Prefix (MP, such as  • nu • not), a Conjugation Prefix (CP, such as  • mu • *ventive*, here), initial pronominal prefix (IPP, such as N in  • mu-n.dab.e • he seizes her) and suffix pronouns ( • en-de3-en • us,  • un-ze2-en • you people). Below, there are examples of all initial pronominal prefixes.

1.16 Initial Pronominal Prefixes (IPP)

In the verbal chain, the Initial Pronominal Prefixes (IPP) come after the Conjugation Prefix (CP) that is  (-mu-) in the examples below. The  (-mu-) prefix is the *ventive*, i.e., it shows that the action is performed towards the speaker. English uses different verbs for the *andative* (motion away from the speaker) and the *ventive* (motion towards the speaker): *to take away* / *to bring*, *to go* / *to come*, etc. Sumerian gets the same effect by adding the *ventive* Conjugation Prefix (CP) to the verbal chain.

Below is an exhaustive list of the Initial Pronominal Prefixes for all grammatical persons.

(tr mu dab e)



He seizes me.

(tr mu e dab e)



He seizes you.

(tr mu un dab e)



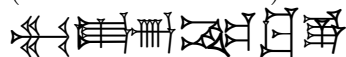
He seizes her.

(tr mu me dab e)



He seizes us.

(tr mu un ne dab e)

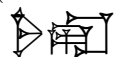


He seizes them.

I have for you a complete example of a transitive sentence below. I provide a pronunciation key and vocabulary, so I hope you can scan the sentence.



(tr munus ra lu2 e she uru a mu na ab shum2 e)



munus ra

for the woman



lu2 e

the man



she

barley



uru a

in the city



mu na ab shum2 e

he gave it to her

The translation of the sentence is: *The man gave barley to the woman in the city.* The person who receives the barley is marked with the dative 𒀭𒊩 {ra}; the doer of the action has the ergative marker 𒂗 {e}, and the place of the occurrence has the locative marker 𒄩 {a}.

Vocabulary

 • (munus) woman, female

 • (ra) *dative marker*

 • (lu2) man, male

 • (e) *ergative marker*

 • (še) barley, grain

 • (uru) city

 • (a) *locative marker*

 • (mu) *venitive conjugation prefix*, here

 • (na) *cross-reference to the dative*, to her

 • (ab) *Initial Prefix Pronoun*, it

 • (shum2) to give

1.17 Intransitive verb

An intransitive verb does not have a direct object. In Sumerian, the subject of an intransitive verb goes to the absolutive case and, therefore, is not marked.

(tr lu2 uru ĝu10-my she-goal i3 im ĝen)			
lu2	uru ĝu10 she-goal	i3 im	ĝen
the king	to my city	<i>finite verb prefix</i>	came

The translation of the above example is: *The king came to my city*. You find the vocabulary necessary to scan this example below.

• (lugal) king

• (im) *finite verb marker*

• (ĝen) to come

• (še3) to, towards

• (uru) city

• (uru.ĝu10) my city

• (uru ĝu10 she-goal) to my city

1.18 Modal Prefix (MP)

The modal prefixes express modality, i.e., relationships to reality or truth. You can only learn the indicative and negation modal prefixes for now. You may learn the other prefixes when you encounter them in Sumerian documents and inscriptions.

Indicative: (∅-)

In Sumerian, the indicative is unmarked. The empty prefix /∅-/ may represent this fact in transliteration. However, people rarely show unmarked prefixes.

Negation: /nu-/



(tr nu un gu7)

He didn't eat it.

Let him: hhe2-



(tr hhe2 ib gu7 e)

Let him eat it.

Indeed: hha-



(tr hha an gu7)

He ate it, indeed.

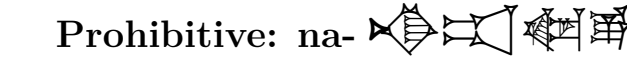
Cohortative: ga-



(tr ga i3 ib2 gar re en ne en)

Let us put it there.

Prohibitive: na-



(tr na ab gu7 e)

He must not eat it.

1.19 Conjugation Prefix (CP)

The main Conjugation Prefixes (CP) are /mu-/ to indicate that the action occurs here, /ba/ to form middle/passive voice, /i3/ to create a finite verbal tense, and /ma/ in combination with /ra/ of benefit. Below, you will find a fairly complete list of Conjugation Prefixes, but you need to learn only /mu-/ and /i3/ for this first lesson.

Here:



(tr mu un re6)

He brought it here.

Finite verb:



(tr i3 im êen)

He came here.

Finite verb, followed by open vowel:



(tr bi2 in re6)

He made the team bring it.

Finite verb, followed by ra:



(tr ma ra an re6)

He brought it here to you.

Middle voice:



(tr ba an re6)

He took it for himself.

Obs. The middle voice with /ba/ indicates an action that affects the doer.

Passive voice:



(tr ba re6)

It was brought.

1.20 Nominal chain

In Sumerian, most adjectives are formed from verbs by adding the suffix 𒀭 {a}. For example, the verb below means to be strong.

𒀭 (kalag) to be strong

To form an adjective from kalag, one adds an {a}. In Sumerian, different from English, the adjectives follow the noun.

The expression below means *mighty king*. Note that the adjective follows the verb, and the 𒀭 marker contracts with the previous consonant to form the 𒀭 (ga) syllable.

𒀭 𒀭 𒀭 𒀭
(tr lugal kalag ga)
a mighty king

In English, the Saxon genitive is marked with S and precedes the verb. Therefore, one writes “*Elil’s Warrior*.” In Sumerian, the genitive is marked with {k} after a vowel and {ak} after a consonant. Like the adjective, the genitive follows the noun. The {k} of the genitive was rarely written except when combined with the ergative. In this case, it was written as 𒀭 {ke4}.

Below, there is another example of the adjective 𒀭 {a} marker contracting with the previous consonant to form an open syllable.

𒀭 𒀭 𒀭 𒀭
(tr e2 lugal la)
the king’s house

Now, let us examine a somewhat longer example of a noun chain.

𒀭 𒀭 𒀭 𒀭 • 𒀭 𒀭 𒀭 𒀭 • 𒀭 𒀭 𒀭 𒀭

(tr ama a ni ra • dumu lugal la ke4 • e2 mu na du3)
The king’s son has built a house for his mother.

Chapter 2

Inscription in Inanna's temple




Translation: *For Inanna, his lady, Ur-Nammu, the mighty man, the king of Ur, the king of Sumer and Akad, built her temple.*




2.1 Sentence structure

1- [inanna nin a ni].{(r)}	-- For Inanna, his Lady,
2- [ur-nammu	-- Ur-Nammu,
3- [nita kalag].{a}	-- the mighty man,
4- [lugal urim ma].{(k)}	-- the king of Ur,
5- [lugal ki-en-gi ki uri].{k}].{e}	-- the king of Sumer and Akkad,
6- [e2 a ni].{}	-- her (Inanna's) temple
7- mu na du3	-- built.


From now on, the sentence structure will not contain the comments *.{k} #gen* for the genitive, *.{r} #dat* for the dative or *.{e} #erg* for the ergative (doer of the task). The suffixes *.{r}* for the dative, *.{k}* for the genitive and *.{e}* for the ergative should suffice for showing the grammatical function of the noun chain and its components. However, functional suffixes you didn't learn in the previous lessons will be commented on.




2.2 Annotations


 an inanna nin a ni
 (tr an inanna nin a ni)
For Inanna, his lady,


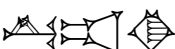

 • (^dinana) Inanna
 • (nin) lady, queen, mistress
 • (a ni) his, her

This noun phrase ends in an unwritten *{(r)}*, the dative marker. However, there is no ambiguity since the verb chain has a dative reference.






 ur-nammu nita kalag ga
 (tr ur-nammu nita kalag ga)
Ur-Nammu, the mighty man,

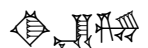

 • (nita) man, male
 • (kalag) to be strong, to be mighty
 • (kalag ga) *adj. from verb*, mighty


One may form adjectives by adding an *{a}*-suffix to a verbal root, *kalag* in the above expression. This nominalizing suffix contracts with the preceding word's final *g*, giving extra information about its correct reading. Different from English, Sumerian adjectives follow the noun they modify.







 lugal urim ma
 (tr lugal urim ma)
the king of Ur,


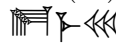

As we learned from text 1, the genitive is formed by {k} after vowels and {ak} after consonants. The scribe often omitted the {(k)} of {ak}. The “m” of “ma” is contamination from the final consonant of the previous word.








 lugal ki-en-gi ki-uri ke4
 (tr lugal ki-en-gi ki-uri ke4)
the king of Sumer and Akkad,




 • (ki-en-gi) Sumer
 • (ki-uri) Akkad

In ke4 () , the {k} is the genitive marker, and the {e} is the ergative marker. You already saw the analysis of the last two lines in lesson 1, therefore they should pose no difficulty to you.




 e2 a ni
 (tr e2 a ni)
his temple


 (e2) house, temple
 (e2 me esh-pl) houses, temples
 (a ni) his






 mu na du3
 (tr mu na du3)
he has built for the god


 (du3) to build, to make, to plant
 (mu) *conjugation prefix (CP), ventive prefix, here*
 (na) *cross-references the dative*



2.3 Verbs


The introduction of an ergative subject into the sentence is the preferred method of expressing causation with intransitive verbs, as you learned on page 8.


 (tr lu2 hhulu e) (tr munus sumun) (tr mu un gen)
 (tr lu2 hhulu e munus libir ra mu un gen)
The bad man caused the old woman to go.

Consider a sentence: “The powerful king caused the man to build a house.” This sentence has three participants, to wit, the mighty king, the man, and the task of building a house. One of the participants forced the other to perform the task. In Sumerian, the dative case marked by  (ra) identifies the person who is caused to do the task. In the third person singular, the Sumerians used the conjugation prefix  (ni) to reference this kind of dative.


 (tr lugal kalag ga e) (tr lu2 ra) (tr e2) (tr mu ni in du3)
 (tr lugal kalag ga e lu2 ra e2 mu ni in du3)
The powerful king made the man to build a house.

In the second person, the verbal chain would have  (ri) as reference. In the example below, (za ra) (za ra, you) is usually omitted since the conjugation prefix  (ni) makes clear who was caused to build the house.


 (tr lugal kalag ga e) (tr za ra) (tr e2) (tr mu ri in du3)
 (tr lugal kalag ga e za ra e2 mu ri in du3)
The powerful king made you build a house.

To make a long story short, in sentences with three participants, the dative indicates the person that the ergative participant causes to do something. However, you must be careful in distinguishing dative of the participant that was caused to do something from the dative of the beneficiary.

APPENDIX 2: Conjugation

Congratulations on finishing another lesson. This appendix details Sumerian pronouns and verbs. After completing the fifth lesson, you can return to it to gain an in-depth understanding of verbs.

2.4 Possessive Pronouns

You already learned a possessive pronoun: 𒂍𒀭𒌆𒀭 (tr lugar ani) “*his master*”. Below, I’ve included a complete list of possessive pronouns.

(tr e2 ĝu10) – my house



(tr e2 zu) – thy house



(tr e2 a ni) – his house



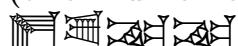
(tr e2 bi) – its house



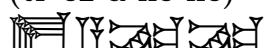
(tr e2 me) – our house



(tr e2 zu ne ne) – your house



(tr e2 a ne ne) – their house



2.5 Independent pronouns

Sumerian has a set of independent pronouns that I advise you to learn right away. They are very important.

(ĝe26) I/me



(ze2) thou/thee



Obs. (ze2) becomes (za) when followed by the dative (ra).

(a-ne) he/she/him/her



(a-ne-ne) they



a ne	dab5	za ra	ma ra ab shum2 mu
he	the tablet	to you	will give

He will give you the tablet.

Vocabulary

(a-ne) he/she

(dab5) the tablet


(zara) to you. (ze2) plus (ra) becomes


Sometimes, an independent pronoun appears with an enclitic copula (verb *to be*) attached to its end, as shown below.


			
gu5-li	zu	ge26	me en
friend	your	I	am


I am your friend


 (tr gu5 li ge10-my (my friend) ze2 me en (you are))
 You are my friend.


 (tr gu5 li zu (your friend) a ne am3 (she/he is))
 She is your friend.



 (tr gu5 li zu (your friend) me en ne en (we are))
 We are your friends.








 (tr gu5 li ge10-my (my friend) me en ze2 en (you guys))
 You guys are my friends.


 (tr gu5 li zu (your friends) a ne ne me esh-pl (they are))
 They are your friends.

Sumerians marked yes/no interrogative sentences only by intonation and possibly by lengthening the final vowels, like many modern languages, such as Spanish and Portuguese.

.
 .
 (tr e2 • a ba a • in du3)
 the temple • who • built?
 Who built the temple?


 (tr a ba • utu • gin-equitative)
 Who • Utu • is like?
 Who is like Utu?

 (tr lugal e • a na • mu un ak)
 the king • what • did he do?
 What did the king do?

2.7 Conjugation

Sumerian verbs have two aspects: the hamtu (perfective) and the marû (imperfective). For the time being, you can translate the hamtu as the English present perfect, and the marû, as the English future.

hamtu: 

(tr lugal e bad3 mu un gub)

The king has erected a wall here.

marû: 

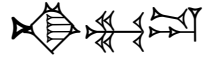
(tr lugal e bad3 i3 gub e)

The king will erect a wall.

2.8 Hamtu and marû conjugation

Marie-Louise Thomsen says that the transitive verb distinguishes the hamtu conjugation with pronominal prefixes, while the marû conjugation has pronominal suffixes. As for intransitive verbs, both the hamtu and the marû have pronominal suffixes.

First person



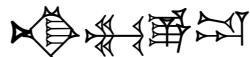
(tr na mu gub)

hamtu: I have set up a border stone.



(tr na i3 gub en)

marû: I will set up a stone.

Second person singular

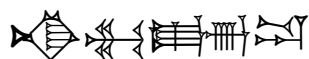
(tr na mu e gub)

hamtu: You have set up a stone.



(tr na i3 gub en)

marû: You will set up a stone.

Third person singular (humans)

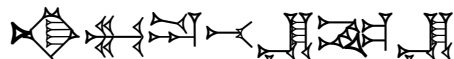
(tr na mu un gub)

hamtu: He has set up a stone.



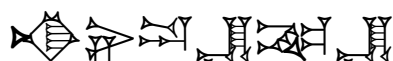
(tr na i3 gub e)

marû: He will set up a stone.

First person plural

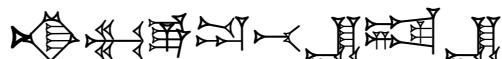
(tr na mu gub be en de3 en)

hamtu: We have set up a stone.



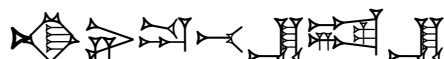
(tr na i3 gub en de3 en)

marû: We will set up a stone.

Second person plural

(tr na mu e gub be en ze2 en)

hamtu: You have set up a stone.



(tr na i3 gub be en ze2 en)

marû: You will set up a stone.

Third person plural



(tr na mu un gub be esh-pl)

hamtu: They have set up a stone.



(tr na i3 gub be e ne)

marû: They will set up a stone.

Animals and plants have different pronouns for the third person singular. Therefore, in the third person singular, the hamtu aspect is not the same for humans and animals.



(tr na mu ub gub)

It has set up a stone.

2.9 Intransitive verb conjugation

Intransitive verbs have the same forms for the hamtu and the marû aspects. Below is the complete conjugation of the verb 𐤁𐤍 (ġen), “to go” (or “to come”).

Singular

𐤁𐤍 𐤁𐤍 𐤁𐤍
(tr i3 ġen en)

I went.

𐤁𐤍 𐤁𐤍 𐤁𐤍
(tr i3 ġen en)

You went.

𐤁𐤍 𐤁𐤍
(tr i3 ġen)

He went.

Plural

𐤁𐤍 𐤁𐤍 𐤁𐤍 𐤁𐤍 𐤁𐤍
(tr i3 re7 en de3 en)

We went.

𐤁𐤍 𐤁𐤍 𐤁𐤍 𐤁𐤍 𐤁𐤍
(tr i3 re7 en ze2 en)


You people went.

𐤁𐤍 𐤁𐤍 𐤁𐤍
(tr i3 re7 esh)

They went.

2.10 True adjectives



















As you learned on page 18, Sumerian adjectives follow the noun they modify. Then, “mighty king” becomes  (lugal kalag ga – *king mighty*) in Sumerian. You also learned that most adjectives are formed from verbs by adding the suffix  {a}. The verb below means to be strong.

 (kalag) to be strong

The expression below means *mighty king*. Pay attention to the fact that the adjective follows the verb, and the  marker contracts with the previous consonant to form the  (ga) syllable.


(tr lugal kalag ga)
a mighty king

Besides the adjectives formed from verbs, Sumerian has a few true adjectives. Below is a list of the most common adjectives that are not formed from verbs.

 • 	kaskal • daġal	wide road
 • 	e2 • gal	big house
 • 	e2 • tur	small house
 • 	lu2 • mahh	great man
 • 	hhur saġ • suġud	high mountain
 • 	e2 • babbar	white house
 • 	tum9 dir • giggi	black cloud
 • 	e2 • gibil	new house
 • 	e2 • sumun	old house

Chapter 3

Ur-Nammu-31




For Ningal, his lady, Ur-Nammu, the mighty man, the king of Ur, the king of Sumer and Akkad, dedicated this vessel for the protection of his life.

Sentence structure

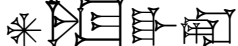




1- [ningal	-- For Ningal,
2- nin a ni].{(r)}	-- his Lady,
3- [ur-nammu	-- Ur-Nammu,
4- nita kalag.{a} #adjective	-- the mighty man,
5- [lugal urim5 ma].{(k)}	-- the king of Ur,
6- [lugal ki-en-gi ki uri].{k}].{e}	-- the king of Sumer and Akkad,
7- [nam til3 a ni].{she3} #goal	-- for the sake of his life,
8- a mu na ru	-- dedicated (this vessel).

3.1 Verbal chain




A Sumerian verb appears as a chain of affixes in a particular order, which is depicted in the table below for the most common occurrences.

Modal	Indicative	Negative	Coortative	Desiderative
Prefix	.∅ null prefix	 nu	 ga	 <i>or</i>  hha or hhe2
Conjugation	Finite	Coordinator	Ventive	Middle Voice
Prefix	 i3	  'n ga	 mu	 ba
Dimensional	Dative	Locative	Directive	
Prefix	 -na-	 -ni-	 -she3-	
Ergative	i3 du3	e du3	in du3	ib2 du3
Infix	  I built	  thou built	  s/he built	   they built
Verbal stem				

Example:

				
(tr an nin gal ra)	(tr lugal e)	(tr uru a)	(tr e2)	(tr i3 na ni in du3)
for Ningal	the king	in the city	a temple	he built
dative	ergative	locative	absolute	ref. dat/loc

3.2 Annotations

(an) ningal

nin

a ni

(tr an ningal nin a ni)

For Ningal, his lady,




(^dNin-gal) goddess of prisons

(nin) lady






ur-nammu

nita

kalag

ga

(tr ur-nammu nita kalag ga)

Ur-Nammu, the mighty man,





(nita) man

(kalag) to be mighty

(ga) *adj. from verb*





lugal

urim

ma

(tr lugal urim ma)

the king of Ur,





(lugal) king

(urim) the city of Ur

(ma) *contr. of gen. with "m" of "urim"*





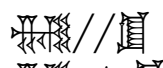


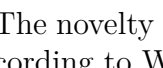
 lugal ki-en-gi ki uri ke4
 (tr lugal ki-en-gi ki uri ke4)
the king of Sumer and Akkad,

 (ki-en-gi) Sumer
 (ki uri) Akkad
 (ke4) *adj. contraction gen/erg*






 nam til3 la ni she3
 (tr nam til3 la ni she3)
for the sake of his life,

 (nam + genitive//she3) because of
 (nam bi she3) because of this
 (til3) to live, to be alive
 (til3 la(k)) of his life

The novelty in this inscription is the terminative marked with  (she3). According to Wikipedia, *Sumerians used the terminative case “-še” to indicate end-points in space or time and the targets or the goals of the action.*





 a mu na ru
 (tr a mu na ru)
dedicated it (this object).

 (a//ru) to dedicate

APPENDIX 3: Imperative

The prefix /h̥a/ 𐌕𐌕 expresses a request to the second person. It can be considered a polite form of imperative.

𐌕𐌕 𐌕𐌕𐌕𐌕 𐌕𐌕𐌕 𐌕𐌕𐌕 𐌕𐌕𐌕𐌕
 she ġu10-my hha mu tum3
 (tr she ġu10-my hha mu tum3)
You should bring my barley.

𐌕𐌕 (she) barley, grain
 𐌕𐌕𐌕𐌕 (ġu10) my, *first-person possessive pronoun*
 𐌕𐌕𐌕 (mu) *ventive particle*, here
 𐌕𐌕𐌕𐌕 (tum3) *Alternative form of* 𐌕𐌕𐌕 (tum2), to bring

On the other hand, the imperative expresses a direct command to a person. It is expressed by re-shaping the verbal phrase: imperative forms start with the hamtu base followed by the prefixes of the finite verbal form.

𐌕𐌕𐌕𐌕 𐌕𐌕𐌕𐌕 𐌕𐌕𐌕𐌕
 shum2 ma2-me ab-it
 (tr shum2 ma2-me ab-it)
Give it to me.

𐌕𐌕𐌕𐌕 (šum2) to give
 𐌕𐌕𐌕𐌕 (ma2) *1st-person personal pronoun*: to me, I, with me
 𐌕𐌕𐌕𐌕 (ab) *3rd-person pronoun*: it

Compare the imperative with the declarative sentence:

ma2 a ne shum2

 (tr ma2-me ane-him shum2)

He gave it to me.

(shum2) to give

 (ma2) *personal pronoun:* to me, I, with me

 (a ne) he, she

 (a ne da nu me a) without him

Plural imperative forms add the suffix (tr un ze2 en) that you will learn in a future lesson. This suffix means “You people.”

nin9-sister gu10-my tum2 mu un ze2 en

 (tr nin9-sister gu10-my tum2 mu un ze2 en)

You people, bring in my sister.

(nin9) sister

 (gu10-my) my

 (mu) *ventive prefix,* here

 (tum2) to bring, pl.

 (un ze2 en) *suffix pronoun:* you people

Another example of imperative:


 dug4 ane-him ab-it
 (tr dug4 ane-him ab-it)
Say it to him.

 (dug4) to speak, to say
 (ane-him) he/him, she/her
 (ab-it) 3rd-person pron.: it

In the imperative, the prefix  (i3) is often replaced by /-a/:


 (tr e2 she3 i3 êen)
 “He went home.”


 (tr e2 she3 êen na)
 Go home!

3.3 Conjunctions

All languages have conjunctions to connect sentences, and Sumerian is no exception. An important conjunction is *tukun-be2*, which means “if.”

tukun-be2	dub bu2 ta	gu3	mu da ab de2	e2 she3	gen na
if	this tablet	out	can read	to house	go

(tr tukum dub be2 ta gu3 mu da ab de2 e2 she3 gen na)
If you can read out this tablet, go home.

Vocabulary

• (ne-en) this thing

• (tukun-be2) if

• (gu3//de2) to read out, *requires ablative*

• (dub) tablet

• (dub.be2) this tablet

Other important conjunctions are (tr u3) “/also|and/,” (tr ud) “/when/,” (tr ud da) “/when|if/,” (tr tukum bi) “/if/” and (tr en na) “/until/.”

Mark of an entrepreneur



(tr lipish u3 nam-ku3-zu)

Courage and Sagacity

Vocabulary



(lipish) emotion, anger, rage, courage



(u3) and



(nam-ku3-zu) intelligence, sagacity

A colaborator is a brother



za-e • u3 • ġa2-e • shesh • me.en.de3.en

you • and • I • brothers • we are

You and I are brothers.

Vocabulary



• (za-e /ze/) Alternative form of , you



• (u3) and



• (ġa2-e) *Alternative form of*  (ġe26), “I”



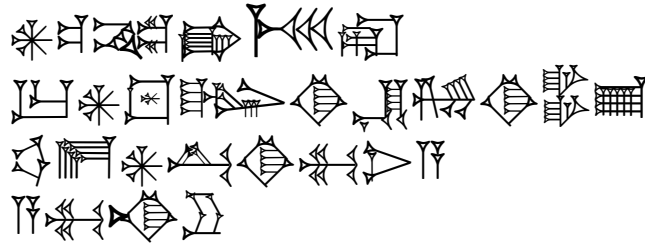
• (šeš /šeš/) brother, colaborator



• (me.en.de3.en) we are

Dedication to Gilgamesh

Gilgamesh was the first king of Uruk. His rule probably took place in the beginning of the Dynastic Period, c. 2900 – 2350 BC, and he became a major figure in Sumerian legend during the Third Dynasty of Ur, from circa 2112 to circa 2004 BC.



(tr bil3-ga-mesh3 ra)


For Gilgamesh,


 • (ra) *Dative marker*, to || for



(tr ur-nammu • lugal • ki-en-gi • ki uri • ke4)

Ur-Nammu, the king of Sumer and Akkad,

 • (ki-en-gi) Sumer


 • (ki-uri) Akkad




(tr ud • e2 an nanna • mu du3 • a)





when he built the temple of Nanna,

Obs.  (a) is the locative marker.

 • (ud) when

 • (e2 an nanna) temple of the god Nanna

 • (mu-du3) he built here

(tr ne-en • a / mu-e / ru)

he dedicated this object.

𐤊𐤍 • (ne-en) this thing, this object

Y//Σ • (a // ru) to dedicate

Obs. the verb $\mathbb{Y} // \Sigma$ is split around its prefixes


















The $\mathbb{Y}/$ (a/) component comes before the prefix chain, and the $/\mathbb{Y}$ (/ru) component comes after. In the vocabulary, the two components of such a verb are separated by a double slash, C1//C2. Examples:

 //  • (gu3//de2) to read out, *requires ablative*

Y//Σ • (a // ru) to dedicate

 // • (saḡ-ḡiš-ra) to commit murder

Ur-Nammu's Law


(tr tukun-be2 lu2 u3 saĝ gish bi in ra lu2 bi i3 gaz e)

If a man commits murder,

this man will be executed.

(tr tukun-be2 • lu2 • u3 • saĝ-gish / bi in / ra)

if • a man • and • commit murder,

 • (tukun-be2) if

• (lu2) man

• (u3) and

𐎧𐎠𐎧𐎠𐎧𐎠 // 𐎧𐎠𐎧𐎠𐎧𐎠 • (saḡ-ḡiš-ra) to commit murder

𒌷𒌵𒂗 • 𒌷𒌵𒂗𒌷𒂗𒌷𒂗
 (tr lu2 bi • i3 gaz e)
 that man • will be executed

𒌷𒌵𒂗 • (lu2 bi or lu2 be2) this man
 𒌷𒂗 • (i3) *finite verb marker in the verbal chain*
 𒌷𒂗𒌷𒂗 • (gaz) to kill, to slaughter, to execute

Vocabulary for the examples of conjunction

𒌷𒌷 • (za-e /ze/) *Alternative form of* 𒌷𒌷, you

𒌷𒌷𒌷 • (ne-en) this thing

𒌷//𒌷 • (a // ru) to dedicate

𒌷 • (ud) sun, day, when

𒌷𒌷𒌷 • (ki-en-gi) Sumer

𒌷𒌷𒌷 • (ki-uri) Akkad

𒌷𒌷 • (gaz) to kill, to execute

𒌷𒌷𒌷//𒌷𒌷 • (saḡ-ḡiš-ra) to commit murder

𒌷𒌷 • (lu2) man

𒌷𒌷𒂗 • (lu2 bi or lu2 be2) this man

𒌷𒌷𒌷 • (ne en) this object

𒌷𒌷 • (ne) this object

𒌷𒌷𒌷𒌷𒂗 • (tukun-be2) if

Chapter 4

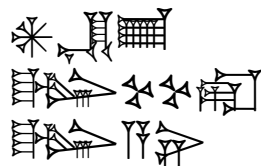
Ur-Nammu-23



Translation: *For Enlil, the king of all the lands, his master, Ur-Nammu, the king of Sumer and Akkad, built his temple. The king also dredged the Enerinnun canal for Enlil.*

4.1 Sentence structure

The text starts with the benefactive, that ends in {(r)}, not expressed.



The plural of nouns that refer to human beings is formed by a suffixed “ene”. The plural of things, plants and animals is usually unmarked. Reduplication – such as “kur kur” (𒌦𒌦) – conveys the idea of totality: “all the lands.”

Then comes the agent, with the E prefix combined with the genitive ending into KE4 (𒂗𒅗).

The next in the line is the object that was built, to wit, his temple 𒂗𒅗𒂗𒅗 (tr e2 a ni).

1- [enlil	-- For Enlil,
2- [lugal kur kur].{ra(K)}	-- the king of all lands,
3- [lugar ani]].{(r)}	-- his king,
4- [ur nammu	-- Ur-Nammu,
5- [lugal urim].{ma(k)}	-- king of Ur,
6- lugal [kiengi kiuri].{k}].{e}	-- king of Sumer and Akkad,
7- [e2 ani].{}	-- his temple
8- mu na du3	-- build
9- [id2 en erin2 nun	-- The Enerinnun canal,
10- [id2 nidba].{k}.ani].{}	-- his canal of food offering,
11- mu na ba al	-- (the king) dredged for him.

4.2 Annotations



an en lil2 lugal kur kur ra lugal a ni

(tr an en lil2 lugal kur kur ra lugal a ni)

For Enlil, king of all lands, his master,







(d-en-lil2) Enlil, the king of gods




𒌦 (kur) mountain,land, country








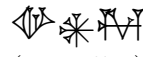





 (tr ur-nammu) (tr lugal) (tr urim5) (tr ma)
 (tr ur-nammu lugal urim5 ma)
Ur-Nammu, the king of Ur,






 (tr lugal) (tr ki-en-gi) (tr ki uri) (tr ke4)
 (tr lugal ki-en-gi ki uri ke4)
the king of Sumer and Akkad,





 (tr e2) (tr a ni) (tr mu na du3)
 (tr e2 a ni mu na du3)
he has built the god's temple.






 (tr id2) (tr en) (tr erin2) (tr nun)
 (tr id2 en erin2 nun)
The Enerinnun canal,

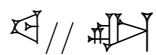





 (tr id2) (tr nidba) (tr ka) (tr ni) (tr mu na ba al)
 (tr id2 nidba ka ni mu na ba al)
his canal of food offerings, the king dredged for him.

Vocabulary

 (id2) river, watercourse, canal

 (kurum6) food ration

 (kurum6 inanna.k) food of Inanna

 (ba-al) to excavate, to dig

4.3 Proper Adjectives

On page 32, you learned that most Sumerian adjectives are formed from verbs that express qualifications, such as “*te be mighty*” (mahh 𒌦𒀭). The 𒌦 (a) suffix transforms such verbs into adjectives. However, there are proper adjectives that you should learn by heart since they are very few. Below is the rest of the list of proper adjectives.

𒌦𒀭 • 𒌦𒀭	lugal • libir	former king
𒌦𒀭 • 𒌦𒀭	inim • zid	true word
𒌦𒀭 • 𒌦𒀭	inim • lul	false word
𒌦𒀭 • 𒌦𒀭	(she) • (hhulu)	bad barley
𒌦𒀭 • 𒌦𒀭	(na) • (dugud)	heavy stone
𒌦 • 𒌦	(ninda) • (du10)	sweet food
𒌦𒀭 • 𒌦𒀭	(barag sig9 ga) • (ku3)	holly shrine
𒌦 • 𒌦	(ĝar) • (sikil)	clean place
𒌦 • 𒌦	(munus) • (silim)	healthy woman
𒌦 • 𒌦	(ninda) • (sis)	bitter food

Appendix 4: Numerals

You completed lesson four. Then you should be able to read many votive Sumerian artifacts that you find in museums around the world.

To boost your reading skills, I recommend that you go back to the first lesson and read the contents of the **APPENDIX: Grammar notes**. Thus, you will improve your holding of case elements, and learn that the dative changes depending on the person to whom the scribe is dedicating a building or an object. You will also receive introductory concepts of transitive verbs, intransitive verbs, the *hamtu* and the *marû* conjugation.

However, before returning to the first lesson, you may want to read about Sumerian numerals, and learn to count things in cuneiform.










4.4 Sumerian Numerals

To count things, modern people use ten digits: 1, 2, 3, 4, 5, 6, 7, 8, 9 and 0. Therefore, it is said that we use base 10. Computers use only two digits to perform calculations: 0 and 1. Then, computers work with base 2. As we will see below, Sumerians used base 60. Therefore, they needed 60 digits to count things.







You will be happy to learn that we still use the Sumerian method of counting when we deal with navigation and time. That is the reason for having 60 minutes in an hour and 60 seconds in a minute. Besides this, the latitude and the longitude that determines a position on the Earth's surface is measured in degrees, where each degree is divided in 60 minutes.

Since the distance from the North Pole is 90 degrees and ten thousand km, each degree of latitude has $10000/90$, roughly 111 km. If you divide 111 km by 60 to discover the length of one minute, you get 1852 km, which is a nautical mile.

Numbers from 1 to 9: dish










	1 – (tr dish)		2 – (tr 2-dish)		3 – (tr 3-dish)
	4 – (tr 4-dish)		5 – (tr 5-dish)		6 – (tr 6-dish)
	7 – (tr 7-dish)		8 – (tr 8-dish)		9 – (tr 9-dish)

Numbers from 10 to 50

	10 – (tr 1-u)		20 – (tr 2-u)		30 – (tr 3-u)
	40 – (tr 4-u)		50 – (tr 5-u)		42 – (tr 4-u 2-dish)







Numbers from 60 to 360

In the same way that we use the digit 1 to represent the numbers one and ten, the Sumerians used  to represent both one and sixty.

	60 – (êgesh)		120 – (2-êgesh)		180 – (3-êgesh)
	240 – (4-êgesh)		300 – (5-êgesh)		360 – (6-êgesh)
	420 – (7-êgesh)		480 – (8-êgesh)		540 – (9-êgesh)

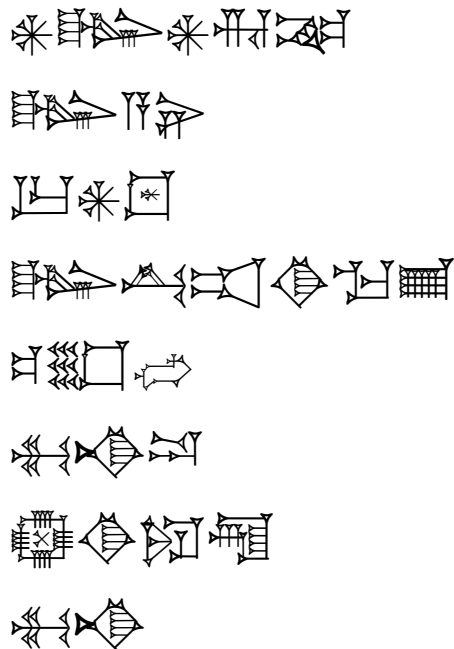
Numbers from 600 to 3600

The geshu wedges are used to represent both multiples of 600 and the numbers 70, 80, 90, 100 and 110, as shown below.

	600/70 – (tr 1-geshu)		1200/80 – (tr 2-geshu)
	1800/90 – (tr 3-geshu)		4 – (tr 4-geshu)
	5 – (tr 5-geshu)		3600 – (tr 1-shar2)

Chapter 5

Ur-Nammu-5



Translation: *Ur-Nammu, the king of Ur, planted a magnificent garden for An, the king of gods. He also has built a dais in a pure place for the god.*

5.1 Sentence structure

1- [an lugal [diĝir.{re.ne}]	-- For An, king of the gods,
2- lugal a ni].{(r)}	-- his master,
3- [ur-nammu	-- Ur-Nammu,
4- [lugal urim5].{ma (k)}}.{e}	-- the king of Ur,
5- [gish kiri6 mah].{Ø}	-- an outstandig garden
6- mu na gub	-- planted.
7- [barag [ki sikil].{la}].{Ø}	-- a dais in a pure place
8- mu na du3	-- (the king) built (for An).

5.2 Annotations








(tr an)
 (tr lugal)
 (tr digir)
 (tr re ne)
 (tr an lugal digir re ne)
For An, the king of the gods,

(an) sky, the sky god Ān
 (digir) deity, god/goddess
 (diggir-rene) gods


(tr lugal)
 (tr a ni)
 (tr lugal a ni)
his master,

(tr ur-nammu)
 (tr lugal)
 (tr urim5 ma ke4)
 (tr ur-nammu lugal urim5 ma ke4)
the king of Ur,

(tr gish)
 (tr kiri6)
 (tr mah)
 (tr mu na gub)
 (tr gish kiri6 mah mu na gub)
a magnificent garden he planted.


 (tr barag)
  (tr ki)
  (tr sikil)
  (tr la)
   
 (tr barag ki sikil la mu na du3)
He also has built a dais in a pure place for An.


Vocabulary


 (geš, ġiš) tree


 (kiri6) orchard, garden plot

 (maḥ) to be lofty, magnificent

 (barag) dais, throne

barag  ! dais, throne

 (sikil) to be pure, clean



sikil  ! to be clean

5.3 Writing numbers

On page 49, you learned how to write basic numerals in Sumerian. In this section, you will learn how to combine these basic numerals.

Modern people use ten digits to count: 1, 2, 3, 4, 5, 6, 7, 8, 9 and 0. Therefore, computer scientists say the contemporary world uses base ten. In base 10, a digit n can represent $n \times 1$, $n \times 10$, $n \times 100$, etc.

How do we know which value the digit stands for? By its position in the numerical string. If the digit comes first from right to left, it simply represents its unities. If it comes second, its basic value must be multiplied by ten. If it comes third in the numerical string, its basic value is multiplied by 100. Then, 342 represents $3 \times 100 + 4 \times 10 + 2$.

A system where the interpretation of a digit depends on its position in the numerical string is called place-value notation or positional numerical notation. Like us, Sumerians used a place value notation, but they counted in base 60. Therefore, the symbol  can be assigned the values 1, 60, 3600, etc. If  comes first in the numerical string, then its value is 1. If it comes second, it represents 60. If it is the third digit from left to right, it represents $1 \times 60 \times 60$, which produces 3600.

There are further details in this story that we need to clarify. Modern arithmetic students have zero to fill the empty places in a numerical figure.

Therefore, they can interpret a value without ambiguity. Sumerians invented zero only late in their history. Then, they needed to interpret the number from context. They could also place the numerical string in boxes and leave empty boxes where we would place a zero. Let us see one example. Below, you can see the number 1273.

(tr 2-gesh)	(tr 1-geshu)	(tr 3-dish)
2×60	$60 + 10$	3
1200	70	3

Cardinal numbers show how many things one is dealing with. In Sumerian, cardinal numbers come after the noun, exactly like adjectives. Therefore, (mu imin) means “seven years”. Here, (imin) is the name of the number seven. Just like one can write 7 or seven in English, one can say (7-dish) or (imin) in Sumerian. Consider the example below.

(tr an na ra am an suen) (tr mu imin am3) (tr mu un ge en)
For seven years, Naram-Suen was motionless.

(mu) year
 (ge) to be firm, to be motionless

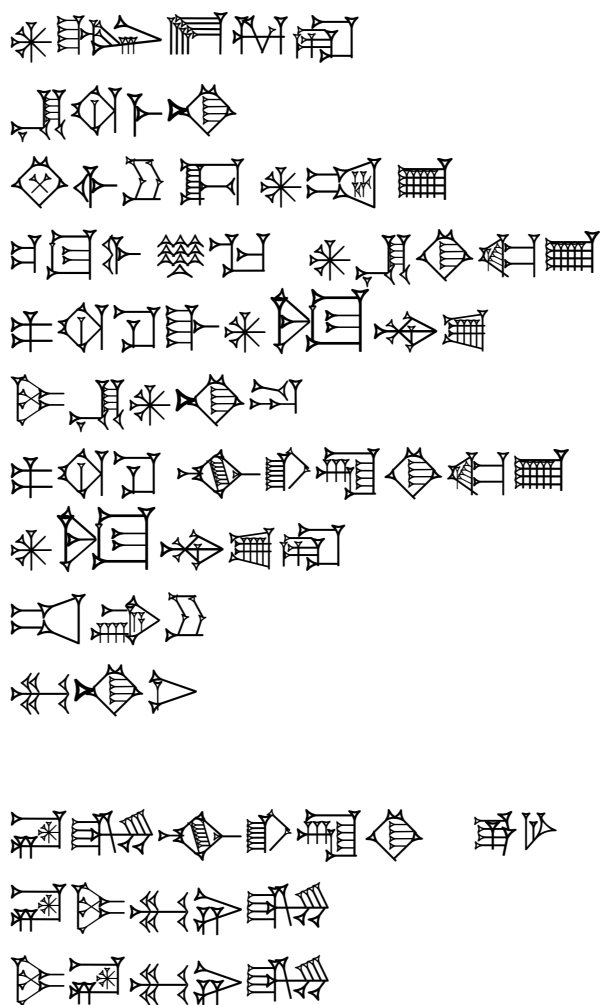
A literal translation of (mu imin am3) could be: “years that are seven.” Another example:

(tr abgal imin e) (tr sig nim ta) (tr shu mu ra in mu2 ush)
The seven sages have enlarged it for you in the lowlands and highlands.

(abgal) sage
 (sig) lowland
 (nim) highland
 // (shu//mu2) to enlarge

Chapter 6


Ama gi





6.1 Translation


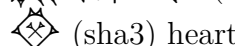

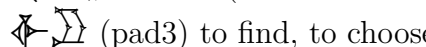
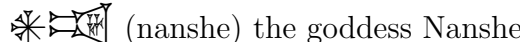
For Lugalemush, Entemena, the chosen of Nanshe's heart, the general governor of Ningirsu, the son of Enannatum, the governor of Lagash, has built the shrine of Dugru. He instituted a remission of Lagash's obligations. He returned the mother to her children. He returned the children to their mother.


6.2 Annotations

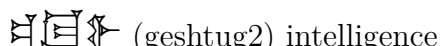
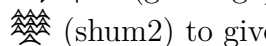

 (tr an) (tr lugal e2 mush3) (tr ra)
 (tr an lugal e2 mush3 ra)
For the divine Lugalemush


 (an lugal e2 mush3) Lugalemush, *Inanna's husband*

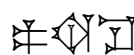


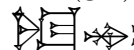

 (tr en-te-me-na) (tr sha3) (tr pad3 da) (tr nanshe ke4)
 (tr en-te-me-na sha3 pad3 da nanshe ke4)
Entemena, the chosen of Nanshe's heart,


 (en-te-me-na) Entemena
 (sha3) heart
 (tr sha3 mu ba ka) in the middle of that year
 (pad3) to find, to choose
 (nanshe) the goddess Nanshe




 (tr geshtug2) (tr shum2 ma) (tr enki ka ke4)
 (tr geshtug2 shum2 ma enki ka ke4)
given wisdom by Enky,

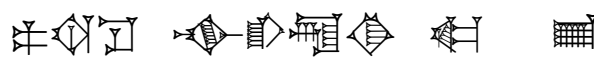
 (geshtug2) intelligence
 (shum2) to give

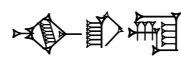


 (tr ensi2) (tr gal) (tr an ningirsu)
 (tr ensi2 gal an ningirsu)
the general governor of Ningirsu

 (ensi2) governor
 (gal), pl.  (gal gal) big, large, great
 (ningirsu) the city of Ningirsu


 (tr dumu) (tr en-an-na-tum2)
 (tr dumu en-an-na-tum2)
the son of Enannatum,


 (dumu) child, son, daughter
 (en-an-na-tum2) Enannatum I of Lagash



 (tr ensi2) (tr lagash ki) (tr ka) (tr ke4)
 (tr ensi2 lagash ki ka ke4)
the governor of Lagash,














 (lagash) the city of Lagash
 (ke4) *gen. contracted with erg.*

(tr an ningirsu ra) (tr esh3 dug ru) (tr mu na du3)
 (tr an ningirsu ra esh3 dug ru mu na du3)
he built the shrine of Dugru for Ningirsu.

(tr ama gi4) (tr lagash ki) (tr e gar)
 (tr ama gi4 lagash ki e gar)
He instituted a remission of the obligations of Lagash.

(ama gi4) freedom from debt or bondage
 (gar), marû (gar gar) to institute
 (e) *Finite verb marker before roots containing the vowel “a”*

Ama-gi4 means freedom, liberty, the right to return to one's mother, and remission. The verb e-gar () means “to place” but conveys the idea of “to institute.”

According to Marie-Louise Thomsen, the finite verb Conjugation Prefix  (i3) has the variant  (e) in Old Sumerian texts from Lagash, Uruk, Ur and Umma. In particular  /-e/ is used immediately before verbal roots containing the vowels “a” and “e”, e.g.,  (e gar),  (e ak),  (e la2) and  (e me a). The finite verb marker  (e) is also used before the case elements  /-da-/,  /-na-/,  /-ne-/,  /-she-/ and  /-ta-/.




 (tr ama) (tr dumu) (tr mu ni gi4)
 (tr ama dumu mu ni gi4)
He returned the mother to her child.

 (ama) mother
 (dumu) child
 (gi4) to send back
 (ni) *loc.*, to the place
 (mu) *ventive*, here




 (tr dumu) (tr ama) (tr mu ni gi4)
 (tr dumu ama mu ni gi4)
He returned the child to her mother.

6.3 Reduced relative clause

Suppose you want to say, in Sumerian, that “*Nanshe’s heart has chosen Entemena.*” You could write something thus:

(tr sha3 nanshe ke4) (tr en-te-me-na) (tr i3 pad3)

 (tr sha3 nanshe ke4 en-te-me-na i3 pad3)

Nanshe’s heart has chosen Entemena.

In the example, the reader knows that the heart of Nanshe performs the task due to the genitive/ergative marker (ke4).

In English, one uses a relative clause to say something like that: “*Entemena, whom Nanshe’s heart has chosen, built the shrine of Dugru for Ningirsu.*” In this example, to qualify Entemena, one uses the clause: “*whom Nanshe’s heart has chosen.*” Therefore, such a clause plays the role of an adjective and is called “relative clause.”

English has an abbreviated form of relative clause, which is called **reduced relative clause**: “*Entemena, chosen by Nanshe’s heart – governor of Lagash – has built the temple of Dugru for Ningirsu.*” Sumerian also has reduced relative clauses, as shown in the present inscription.

(tr en-te-me-na) (tr sha3 pad3 da) (tr nanshe ke4)

 (tr en-te-me-na sha3 pad3 da nanshe ke4)

Entemena, chosen by Nanshe’s heart,

(tr ensi2) (tr lagash ki) (tr ka) (tr ke4)

 (tr ensi2 lagash ki ka ke4)

the governor of Lagash,

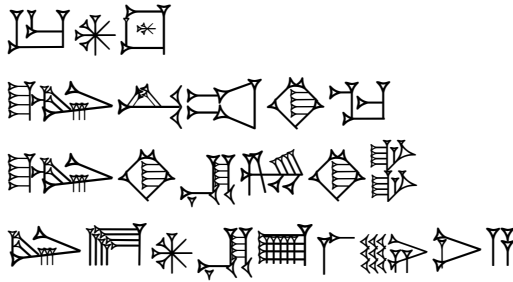
(tr an ningirsu ra) (tr esh3 dug ru) (tr mu na du3)

 (tr an ningirsu ra esh3 dug ru mu na du3)

he built the shrine of Dugru for Ningirsu.





Chapter 7


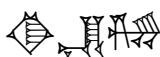

Relative clause














Translation: *Ur-Nammu, the king of Ur, the king of Sumer and Akkad, the man who built the temple of Enlil.*




7.1 Annotations





 (tr ur-nammu) (tr lugal) (tr urim5) (tr ma)
 (tr ur-nammu lugal urim5 ma)
Ur-Nammu, the king of Ur,




 (tr lugal) (tr ki-en-gi) (tr ki uri)
 (tr lugal ki-en-gi ki uri)
the king of Sumer and Akkad,


 (ki-en-gi) Sumer

 (ki uri) Akkad








 (tr lu2) (tr e2) (tr en-lil2 la2) (tr un du3 a)
 (tr lu2 e2 en-lil2 la2 un du3 a)
the man who built the temple of Enlil.

 (lu2) man

 (en-lil2) the god Enlil

7.2 Relative clause

In a Sumerian relative clause, there are two elements. The first element is the head noun, LU2 () , the person who built the temple. The second element is a verbal phrase, which is transformed into an adjective by the suffix A (). There is no need for a relative pronoun, such as “who” or “that.” The verbal phrase follows the noun directly.

Pay attention to an important point: the relative clause ends in the adjective-forming A-morpheme (). After all, relative clauses are adjectives.

Chapter 8

The Finite Verb


Let us analyze the chapter about the **finite verb** in Marie-Louise Thomsen's *The Sumerian Language*. This exercise will show the reader how to cope with a book where all examples are given in transliterate form, without sumerograms.


According to Thomsen, the finite form is a verbal construction with a prefix chain and infix pronouns. It has three conjugations: the intransitive conjugation, the transitive hamtu and the transitive marû conjugation. The components of the finite form are given below.

- Modal Prefixes (MP) – nu 𒀭, ba ra 𒂗𒀭, na 𒂗𒀭, ga 𒂗𒀭, ha 𒂗𒀭, sha 𒂗𒀭, u 𒀭
- Conjugation Prefixes (CP) – i3 𒀭, ga 𒂗𒀭, mu 𒂗𒀭, ba 𒂗𒀭, bi 𒂗𒀭
- Pronominal Prefixes – e/a 𒂗𒀭 / 𒂗𒀭, ?n 𒂗𒀭, ?b 𒂗𒀭
- Verbal stem
- ed (e)/(de3)/
- Pronominal Suffixes – en 𒂗𒀭, e 𒂗𒀭, enden 𒂗𒀭𒂗𒀭, en ze2 en 𒂗𒀭𒂗𒀭, esh2 𒂗𒀭, en ne 𒂗𒀭𒂗𒀭
- Syntactic suffix **-a-** 𒂗𒀭
- Pospositions – e 𒂗𒀭, ra 𒂗𒀭, ta 𒂗𒀭, da 𒂗𒀭, etc.

8.1 Intransitive and Transitive verbs

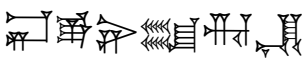
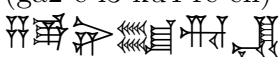
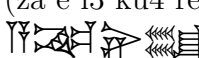
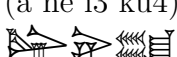


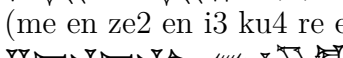
In principle, the Sumerian verbal root is neither transitive nor intransitive, but neutral concerning transitivity. The best way to decide about the transitivity is to count the number of participants in the action. If there is only one participant, one must interpret the verb as intransitive. Two participants indicate that the verb is transitive.


 isimud4 de3 lu2 ki sikil abzu eridu ki she3 im ma ni in ku4 ku4
 (tr isimud4 de3 lu2 ki sikil abzu eridu ki she3 im ma ni in ku4 ku4)
Isimud made the girl enter Abzu Eridu.


 (tr ki sikil) (tr abzu eridu ki she3) (tr i3 ku4)
 (tr ki sikil abzu eridu ki she3 i3 ku4)
The girl entered Abzu Eridu.

8.2 One participant conjugation

Below, is the complete conjugation of the intransitive verb **ku4** .

I entered	 (ĝa2 e i3 ku4 re en)
you entered	 (za e i3 ku4 re en)
he entered	 (a ne i3 ku4)
the man entered	 (lu2 i3 ku4)
we entered	 (me en de3 en i3 ku4 re en de3 en)
you entered (pl.)	 (me en ze2 en i3 ku4 re en ze2 en)
they entered	 (a ne ne i3 ku4 ru esh2)

8.3 Two-participant conjugation

In the two-participant hamtu conjugation, the 1st-singular person has no subject mark and the 1st-plural has only a suffix.

I raised the head.	 (ga2 e saĝ i3 ib2 zig3)
You raised the head.	
The man raised the head.	 (lu2 e saĝ in zig3)
The ox raised the head.	 (gud e saĝ ib2 zig3)
We raised the head.	 (me en de3 en saĝ i3 ib2 zig3 ge en de3 en)
You raised the head.	 (me en ze2 en saĝ mu e zig3 ge en ze2 en)
They raised the head.	 (a ne ne saĝ in zig3 ge esh2)

8.4 Three participant construction

In English, three participant constructions have the form: *X caused Y to attack Z*. In this pattern, there is an underlying two-participant sentence, which is *Y attacked Z*. In Sumerian, the subject of the underlying two-participant sentence is marked with the dative postposition (ra). The verbal chain references to this dative with (ni) for the 3rd-singular and (ri) for the 2nd-singular person.

an en lil2 le gaba shu ĝar nu mu ni tuku
(tr an en lil2 le gaba shu ĝar nu mu ni tuku)

Enlil did not let him have a rival.

(gaba shu ĝar) rival


(tuku) to have, to acquire

𐎧𐎫𐎼𐎠𐎠𐎡𐎢𐎣𐎤𐎥𐎦𐎧𐎨𐎩𐎪𐎫𐎬𐎭𐎮𐎯𐎰𐎱𐎲𐎳𐎴𐎵𐎶𐎷𐎸𐎹𐎺𐎻𐎼𐎽𐎾𐎿𐏀𐏁𐏂𐏃𐏄𐏅𐏆𐏇𐏈𐏉𐏊𐏋𐏌𐏍𐏎𐏏𐏐𐏑𐏒𐏓𐏔𐏕𐏖𐏗𐏘𐏙𐏚𐏛𐏜𐏝𐏞𐏟𐏠𐏡𐏢𐏣𐏤𐏥𐏦𐏧𐏨𐏩𐏪𐏫𐏬𐏭𐏮𐏯𐏰𐏱𐏲𐏳𐏴𐏵𐏶𐏷𐏸𐏹𐏺𐏻𐏼𐏽𐏾𐏿𐐀𐐁𐐂𐐃𐐄𐐅𐐆𐐇𐐈𐐉𐐊𐐋𐐌𐐍𐐎𐐏𐐐𐐑𐐒𐐓𐐔𐐕𐐖𐐗𐐘𐐙𐐚𐐛𐐜𐐝𐐞𐐟𐐠𐐡𐐢𐐣𐐤𐐥𐐦𐐧𐐨𐐩𐐪𐐫𐐬𐐭𐐮𐐯𐐰𐐱𐐲𐐳𐐴𐐵𐐶𐐷𐐸𐐹𐐺𐐻𐐼𐐽𐐾𐐿𐑀𐑁𐑂𐑃𐑄𐑅𐑆𐑇𐑈𐑉𐑊𐑋𐑌𐑍𐑎𐑏𐑐𐑑𐑒𐑓𐑔𐑕𐑖𐑗𐑘𐑙𐑚𐑛𐑜𐑝𐑞𐑟𐑠𐑡𐑢𐑣𐑤𐑥𐑦𐑧𐑨𐑩𐑪𐑫𐑬𐑭𐑮𐑯𐑰𐑱𐑲𐑳𐑴𐑵𐑶𐑷𐑸𐑹𐑺𐑻𐑼𐑽𐑾𐑿𐒀𐒁𐒂𐒃𐒄𐒅𐒆𐒇𐒈𐒉𐒊𐒋𐒌𐒍𐒎𐒏𐒐𐒑𐒒𐒓𐒔𐒕𐒖𐒗𐒘𐒙𐒚𐒛𐒜𐒝𐒞𐒟𐒠𐒡𐒢𐒣𐒤𐒥𐒦𐒧𐒨𐒩𐒪𐒫𐒬𐒭𐒮𐒯𐒰𐒱𐒲𐒳𐒴𐒵𐒶𐒷𐒸𐒹𐒺𐒻𐒼𐒽𐒾𐒿𐓀𐓁𐓂𐓃𐓄𐓅𐓆𐓇𐓈𐓉𐓊𐓋𐓌𐓍𐓎𐓏𐓐𐓑𐓒𐓓𐓔𐓕𐓖𐓗𐓘𐓙𐓚𐓛𐓜𐓝𐓞𐓟𐓠𐓡𐓢𐓣𐓤𐓥𐓦𐓧𐓨𐓩𐓪𐓫𐓬𐓭𐓮𐓯𐓰𐓱𐓲𐓳𐓴𐓵𐓶𐓷𐓸𐓹𐓺𐓻𐓼𐓽𐓾𐓿𐔀𐔁𐔂𐔃𐔄𐔅𐔆𐔇𐔈𐔉𐔊𐔋𐔌𐔍𐔎𐔏𐔐𐔑𐔒𐔓𐔔𐔕𐔖𐔗𐔘𐔙𐔚𐔛𐔜𐔝𐔞𐔟𐔠𐔡𐔢𐔣𐔤𐔥𐔦𐔧𐔨𐔩𐔪𐔫𐔬𐔭𐔮𐔯𐔰𐔱𐔲𐔳𐔴𐔵𐔶𐔷𐔸𐔹𐔺𐔻𐔼𐔽𐔾𐔿𐕀𐕁𐕂𐕃𐕄𐕅𐕆𐕇𐕈𐕉𐕊𐕋𐕌𐕍𐕎𐕏𐕐𐕑𐕒𐕓𐕔𐕕𐕖𐕗𐕘𐕙𐕚𐕛𐕜𐕝𐕞𐕟𐕠𐕡𐕢𐕣𐕤𐕥𐕦𐕧𐕨𐕩𐕪𐕫𐕬𐕭𐕮𐕯𐕰𐕱𐕲𐕳𐕴𐕵𐕶𐕷𐕸𐕹𐕺𐕻𐕼𐕽𐕾𐕿𐖀𐖁𐖂𐖃𐖄𐖅𐖆𐖇𐖈𐖉𐖊𐖋𐖌𐖍𐖎𐖏𐖐𐖑𐖒𐖓𐖔𐖕𐖖𐖗𐖘𐖙𐖚𐖛𐖜𐖝𐖞𐖟𐖠𐖡𐖢𐖣𐖤𐖥𐖦𐖧𐖨𐖩𐖪𐖫𐖬𐖭𐖮𐖯𐖰𐖱𐖲𐖳𐖴𐖵𐖶𐖷𐖸𐖹𐖺𐖻𐖼𐖽𐖾𐖿𐗀𐗁𐗂𐗃𐗄𐗅𐗆𐗇𐗈𐗉𐗊𐗋𐗌𐗍𐗎𐗏𐗐𐗑𐗒𐗓𐗔𐗕𐗖𐗗𐗘𐗙𐗚𐗛𐗜𐗝𐗞𐗟𐗠𐗡𐗢𐗣𐗤𐗥𐗦𐗧𐗨𐗩𐗪𐗫𐗬𐗭𐗮𐗯𐗰𐗱𐗲𐗳𐗴𐗵𐗶𐗷𐗸𐗹𐗺𐗻𐗼𐗽𐗾𐗿𐘀𐘁𐘂𐘃𐘄𐘅𐘆𐘇𐘈𐘉𐘊𐘋𐘌𐘍𐘎𐘏𐘐𐘑𐘒𐘓𐘔𐘕𐘖𐘗𐘘𐘙𐘚𐘛𐘜𐘝𐘞𐘟𐘠𐘡𐘢𐘣𐘤𐘥𐘦𐘧𐘨𐘩𐘪𐘫𐘬𐘭𐘮𐘯𐘰𐘱𐘲𐘳𐘴𐘵𐘶𐘷𐘸𐘹𐘺𐘻𐘼𐘽𐘾𐘿𐙀𐙁𐙂𐙃𐙄𐙅𐙆𐙇𐙈𐙉𐙊𐙋𐙌𐙍𐙎𐙏𐙐𐙑𐙒𐙓𐙔𐙕𐙖𐙗𐙘𐙙𐙚𐙛𐙜𐙝𐙞𐙟𐙠𐙡𐙢𐙣𐙤𐙥𐙦𐙧𐙨𐙩𐙪𐙫𐙬𐙭𐙮𐙯𐙰𐙱𐙲𐙳𐙴𐙵𐙶𐙷𐙸𐙹𐙺𐙻𐙼𐙽𐙾𐙿𐚀𐚁𐚂𐚃𐚄𐚅𐚆𐚇𐚈𐚉𐚊𐚋𐚌𐚍𐚎𐚏𐚐𐚑𐚒𐚓𐚔𐚕𐚖𐚗𐚘𐚙𐚚𐚛𐚜𐚝𐚞𐚟𐚠𐚡𐚢𐚣𐚤𐚥𐚦𐚧𐚨𐚩𐚪𐚫𐚬𐚭𐚮𐚯𐚰𐚱𐚲𐚳𐚴𐚵𐚶𐚷𐚸𐚹𐚺𐚻𐚼𐚽𐚾𐚿𐛀𐛁𐛂𐛃𐛄𐛅𐛆𐛇𐛈𐛉𐛊𐛋𐛌𐛍𐛎𐛏𐛐𐛑𐛒𐛓𐛔𐛕𐛖𐛗𐛘𐛙𐛚𐛛𐛜𐛝𐛞𐛟𐛠𐛡𐛢𐛣𐛤𐛥𐛦𐛧𐛨𐛩𐛪𐛫𐛬𐛭𐛮𐛯𐛰𐛱𐛲𐛳𐛴𐛵𐛶𐛷𐛸𐛹𐛺𐛻𐛼𐛽𐛾𐛿𐜀𐜁𐜂𐜃𐜄𐜅𐜆𐜇𐜈𐜉𐜊𐜋𐜌𐜍𐜎𐜏𐜐𐜑𐜒𐜓𐜔𐜕𐜖𐜗𐜘𐜙𐜚𐜛𐜜𐜝𐜞𐜟𐜠𐜡𐜢𐜣𐜤𐜥𐜦𐜧𐜨𐜩𐜪𐜫𐜬𐜭𐜮𐜯𐜰𐜱𐜲𐜳𐜴𐜵𐜶𐜷𐜸𐜹𐜺𐜻𐜼𐜽𐜾𐜿𐝀𐝁𐝂𐝃𐝄𐝅𐝆𐝇𐝈𐝉𐝊𐝋𐝌𐝍𐝎𐝏𐝐𐝑𐝒𐝓𐝔𐝕𐝖𐝗𐝘𐝙𐝚𐝛𐝜𐝝𐝞𐝟𐝠𐝡𐝢𐝣𐝤𐝥𐝦𐝧𐝨𐝩𐝪𐝫𐝬𐝭𐝮𐝯𐝰𐝱𐝲𐝳𐝴𐝵𐝶𐝷𐝸𐝹𐝺𐝻𐝼𐝽𐝾𐝿𐞀𐞁𐞂𐞃𐞄𐞅𐞆𐞇𐞈𐞉𐞊𐞋𐞌𐞍𐞎𐞏𐞐𐞑𐞒𐞓𐞔𐞕𐞖𐞗𐞘𐞙𐞚𐞛𐞜𐞝𐞞𐞟𐞠𐞡𐞢𐞣𐞤𐞥𐞦𐞧𐞨𐞩𐞪𐞫𐞬𐞭𐞮𐞯𐞰𐞱𐞲𐞳𐞴𐞵𐞶𐞷𐞸𐞹𐞺𐞻𐞼𐞽𐞾𐞿𐟀𐟁𐟂𐟃𐟄𐟅𐟆𐟇𐟈𐟉𐟊𐟋𐟌𐟍𐟎𐟏𐟐𐟑𐟒𐟓𐟔𐟕𐟖𐟗𐟘𐟙𐟚𐟛𐟜𐟝𐟞𐟟𐟠𐟡𐟢𐟣𐟤𐟥𐟦𐟧𐟨𐟩𐟪𐟫𐟬𐟭𐟮𐟯𐟰𐟱𐟲𐟳𐟴𐟵𐟶𐟷𐟸𐟹𐟺𐟻𐟼𐟽𐟾𐟿𐠀𐠁𐠂𐠃𐠄𐠅𐠆𐠇𐠈𐠉𐠊𐠋𐠌𐠍𐠎𐠏𐠐𐠑𐠒𐠓𐠔𐠕𐠖𐠗𐠘𐠙𐠚𐠛𐠜𐠝𐠞𐠟𐠠𐠡𐠢𐠣𐠤𐠥𐠦𐠧𐠨𐠩𐠪𐠫𐠬𐠭𐠮𐠯𐠰𐠱𐠲𐠳𐠴𐠵𐠶𐠷𐠸𐠹𐠺𐠻𐠼𐠽𐠾𐠿𐡀𐡁𐡂𐡃𐡄𐡅𐡆𐡇𐡈𐡉𐡊𐡋𐡌𐡍𐡎𐡏𐡐𐡑𐡒𐡓𐡔𐡕𐡖𐡗𐡘𐡙𐡚𐡛𐡜𐡝𐡞𐡟𐡠𐡡𐡢𐡣𐡤𐡥𐡦𐡧𐡨𐡩𐡪𐡫𐡬𐡭𐡮𐡯𐡰𐡱𐡲𐡳𐡴𐡵𐡶𐡷𐡸𐡹𐡺𐡻𐡼𐡽𐡾𐡿𐢀𐢁𐢂𐢃𐢄𐢅𐢆𐢇𐢈𐢉𐢊𐢋𐢌𐢍𐢎𐢏𐢐𐢑𐢒𐢓𐢔𐢕𐢖𐢗𐢘𐢙𐢚𐢛𐢜𐢝𐢞𐢟𐢠𐢡𐢢𐢣𐢤𐢥𐢦𐢧𐢨𐢩𐢪𐢫𐢬𐢭𐢮𐢯𐢰𐢱𐢲𐢳𐢴𐢵𐢶𐢷𐢸𐢹𐢺𐢻𐢼𐢽𐢾𐢿𐣀𐣁𐣂𐣃𐣄𐣅𐣆𐣇𐣈𐣉𐣊𐣋𐣌𐣍𐣎𐣏𐣐𐣑𐣒𐣓𐣔𐣕𐣖𐣗𐣘𐣙𐣚𐣛𐣜𐣝𐣞𐣟𐣠𐣡𐣢𐣣𐣤𐣥𐣦𐣧𐣨𐣩𐣪𐣫𐣬𐣭𐣮𐣯𐣰𐣱𐣲𐣳𐣴𐣵𐣶𐣷𐣸𐣹𐣺𐣻𐣼𐣽𐣾𐣿𐤀𐤁𐤂𐤃𐤄𐤅𐤆𐤇𐤈𐤉𐤊𐤋𐤌𐤍𐤎𐤏𐤐𐤑𐤒𐤓𐤔𐤕𐤖𐤗𐤘𐤙𐤚𐤛𐤜𐤝𐤞𐤟𐤠𐤡𐤢𐤣𐤤𐤥𐤦𐤧𐤨𐤩𐤪𐤫𐤬𐤭𐤮𐤯𐤰𐤱𐤲𐤳𐤴𐤵𐤶𐤷𐤸𐤹𐤺𐤻𐤼𐤽𐤾𐤿𐥀𐥁𐥂𐥃𐥄𐥅𐥆𐥇𐥈𐥉𐥊𐥋𐥌𐥍𐥎𐥏𐥐𐥑𐥒𐥓𐥔𐥕𐥖𐥗𐥘𐥙𐥚𐥛𐥜𐥝𐥞𐥟𐥠𐥡𐥢𐥣𐥤𐥥𐥦𐥧𐥨𐥩𐥪𐥫𐥬𐥭𐥮𐥯𐥰𐥱𐥲𐥳𐥴𐥵𐥶𐥷𐥸𐥹𐥺𐥻𐥼𐥽𐥾𐥿𐦀𐦁𐦂𐦃𐦄𐦅𐦆𐦇𐦈𐦉𐦊𐦋𐦌𐦍𐦎𐦏𐦐𐦑𐦒𐦓𐦔𐦕𐦖𐦗𐦘𐦙𐦚𐦛𐦜𐦝𐦞𐦟𐦠𐦡𐦢𐦣𐦤𐦥𐦦𐦧𐦨𐦩𐦪𐦫𐦬𐦭𐦮𐦯𐦰𐦱𐦲𐦳𐦴𐦵𐦶𐦷𐦸𐦹𐦺𐦻𐦼𐦽𐦾𐦿𐧀𐧁𐧂𐧃𐧄𐧅𐧆𐧇𐧈𐧉𐧊𐧋𐧌𐧍𐧎𐧏𐧐𐧑𐧒𐧓𐧔𐧕𐧖𐧗𐧘𐧙𐧚𐧛𐧜𐧝𐧞𐧟𐧠𐧡𐧢𐧣𐧤𐧥𐧦𐧧𐧨𐧩𐧪𐧫𐧬𐧭𐧮𐧯𐧰𐧱𐧲𐧳𐧴𐧵𐧶𐧷𐧸𐧹𐧺𐧻𐧼𐧽𐧾𐧿𐨀𐨁𐨂𐨃𐨄𐨅𐨆𐨇𐨈𐨉𐨊𐨋𐨌𐨍𐨎𐨏𐨐𐨑𐨒𐨓𐨔𐨕𐨖𐨗𐨘𐨙𐨚𐨛𐨜𐨝𐨞𐨟𐨠𐨡𐨢𐨣𐨤𐨥𐨦𐨧𐨨𐨩𐨪𐨫𐨬𐨭𐨮𐨯𐨰𐨱𐨲𐨳𐨴𐨵𐨶𐨷𐨹𐨺𐨸𐨻𐨼𐨽𐨾𐨿𐩀𐩁𐩂𐩃𐩄𐩅𐩆𐩇𐩈𐩉𐩊𐩋𐩌𐩍𐩎𐩏𐩐𐩑𐩒𐩓𐩔𐩕𐩖𐩗𐩘𐩙𐩚𐩛𐩜𐩝𐩞𐩟𐩠𐩡𐩢𐩣𐩤𐩥𐩦𐩧𐩨𐩩𐩪𐩫𐩬𐩭𐩮𐩯𐩰𐩱𐩲𐩳𐩴𐩵𐩶𐩷𐩸𐩹𐩺𐩻𐩼𐩽𐩾𐩿𐪀𐪁𐪂𐪃𐪄𐪅𐪆𐪇𐪈𐪉𐪊𐪋𐪌𐪍𐪎𐪏𐪐𐪑𐪒𐪓𐪔𐪕𐪖𐪗𐪘𐪙𐪚𐪛𐪜𐪝𐪞𐪟𐪠𐪡𐪢𐪣𐪤𐪥𐪦𐪧𐪨𐪩𐪪𐪫𐪬𐪭𐪮𐪯𐪰𐪱𐪲𐪳𐪴𐪵𐪶𐪷𐪸𐪹𐪺𐪻𐪼𐪽𐪾𐪿𐫀𐫁𐫂𐫃𐫄𐫅𐫆𐫇𐫈𐫉𐫊𐫋𐫌𐫍𐫎𐫏𐫐𐫑𐫒𐫓𐫔𐫕𐫖𐫗𐫘𐫙𐫚𐫛𐫜𐫝𐫞𐫟𐫠𐫡𐫢𐫣𐫤𐫦𐫥𐫧𐫨𐫩𐫪𐫫𐫬𐫭𐫮𐫯𐫰𐫱𐫲𐫳𐫴𐫵𐫶𐫷𐫸𐫹𐫺𐫻𐫼𐫽𐫾𐫿𐬀𐬁𐬂𐬃𐬄𐬅𐬆𐬇𐬈𐬉𐬊𐬋𐬌𐬍𐬎𐬏𐬐𐬑𐬒𐬓𐬔𐬕𐬖𐬗𐬘𐬙𐬚𐬛𐬜𐬝𐬞𐬟𐬠𐬡𐬢𐬣𐬤𐬥𐬦𐬧𐬨𐬩𐬪𐬫𐬬𐬭𐬮𐬯𐬰𐬱𐬲𐬳𐬴𐬵𐬶𐬷𐬸𐬹𐬺𐬻𐬼𐬽𐬾𐬿𐭀𐭁𐭂𐭃𐭄𐭅𐭆𐭇𐭈𐭉𐭊𐭋𐭌𐭍𐭎𐭏𐭐𐭑𐭒𐭓𐭔𐭕𐭖𐭗𐭘𐭙𐭚𐭛𐭜𐭝𐭞𐭟𐭠𐭡𐭢𐭣𐭤𐭥𐭦𐭧𐭨𐭩𐭪𐭫𐭬𐭭𐭮𐭯𐭰𐭱𐭲𐭳𐭴𐭵𐭶𐭷𐭸𐭹𐭺𐭻𐭼𐭽𐭾𐭿𐮀𐮁𐮂𐮃𐮄𐮅𐮆𐮇𐮈𐮉𐮊𐮋𐮌𐮍𐮎𐮏𐮐𐮑𐮒𐮓𐮔𐮕𐮖𐮗𐮘𐮙𐮚𐮛𐮜𐮝𐮞𐮟𐮠𐮡𐮢𐮣𐮤𐮥𐮦𐮧𐮨𐮩𐮪𐮫𐮬𐮭𐮮𐮯𐮰𐮱𐮲𐮳𐮴𐮵𐮶𐮷𐮸𐮹𐮺𐮻𐮼𐮽𐮾𐮿𐯀𐯁𐯂𐯃𐯄𐯅𐯆𐯇𐯈𐯉𐯊𐯋𐯌𐯍𐯎𐯏𐯐𐯑𐯒𐯓𐯔𐯕𐯖𐯗𐯘𐯙𐯚𐯛𐯜𐯝𐯞𐯟𐯠𐯡𐯢𐯣𐯤𐯥𐯦𐯧𐯨𐯩𐯪𐯫𐯬𐯭𐯮𐯯𐯰𐯱𐯲𐯳𐯴𐯵𐯶𐯷𐯸𐯹𐯺𐯻𐯼𐯽𐯾𐯿𐰀𐰁𐰂𐰃𐰄𐰅𐰆𐰇𐰈𐰉𐰊𐰋𐰌𐰍𐰎𐰏𐰐𐰑𐰒𐰓𐰔𐰕𐰖𐰗𐰘𐰙𐰚𐰛𐰜𐰝𐰞𐰟𐰠𐰡𐰢𐰣𐰤𐰥𐰦𐰧𐰨𐰩𐰪𐰫𐰬𐰭𐰮𐰯𐰰𐰱𐰲𐰳𐰴𐰵𐰶𐰷𐰸𐰹𐰺𐰻𐰼𐰽𐰾𐰿𐱀𐱁𐱂𐱃𐱄𐱅𐱆𐱇𐱈𐱉𐱊𐱋𐱌𐱍𐱎𐱏𐱐𐱑𐱒𐱓𐱔𐱕𐱖𐱗𐱘𐱙𐱚𐱛𐱜𐱝𐱞𐱟𐱠𐱡𐱢𐱣𐱤𐱥𐱦𐱧𐱨𐱩𐱪𐱫𐱬𐱭𐱮𐱯𐱰𐱱𐱲𐱳𐱴𐱵𐱶𐱷𐱸𐱹𐱺𐱻𐱼𐱽𐱾𐱿𐲀𐲁𐲂𐲃𐲄𐲅𐲆𐲇𐲈𐲉𐲊𐲋𐲌𐲍𐲎𐲏𐲐𐲑𐲒𐲓𐲔𐲕𐲖𐲗𐲘𐲙𐲚𐲛𐲜𐲝𐲞𐲟𐲠𐲡𐲢𐲣𐲤𐲥𐲦𐲧𐲨𐲩𐲪𐲫𐲬𐲭𐲮𐲯𐲰𐲱𐲲𐲳𐲴𐲵𐲶𐲷𐲸𐲹𐲺𐲻𐲼𐲽𐲾𐲿𐳀𐳁𐳂𐳃𐳄𐳅𐳆𐳇𐳈𐳉𐳊𐳋𐳌𐳍𐳎𐳏𐳐𐳑𐳒𐳓𐳔𐳕𐳖𐳗𐳘𐳙𐳚𐳛𐳜𐳝𐳞𐳟𐳠𐳡𐳢𐳣𐳤𐳥𐳦𐳧𐳨𐳩𐳪𐳫𐳬𐳭𐳮𐳯𐳰𐳱𐳲𐳳𐳴𐳵𐳶𐳷𐳸𐳹𐳺𐳻𐳼𐳽𐳾𐳿𐴀𐴁𐴂𐴃𐴄𐴅𐴆𐴇𐴈𐴉𐴊𐴋𐴌𐴍𐴎𐴏𐴐𐴑𐴒𐴓𐴔𐴕𐴖𐴗𐴘𐴙𐴚𐴛𐴜𐴝𐴞𐴟𐴠𐴡𐴢𐴣𐴤𐴥𐴦𐴧𐴨𐴩𐴪𐴫𐴬𐴭𐴮𐴯𐴰𐴱𐴲𐴳𐴴𐴵𐴶𐴷𐴸𐴹𐴺𐴻𐴼𐴽𐴾𐴿𐵀𐵁𐵂𐵃𐵄𐵅𐵆𐵇𐵈𐵉𐵊𐵋𐵌𐵍𐵎𐵏𐵐𐵑𐵒𐵓𐵔𐵕𐵖𐵗𐵘𐵙𐵚𐵛𐵜𐵝𐵞𐵟𐵠𐵡𐵢𐵣𐵤𐵥𐵦𐵧𐵨𐵩𐵪𐵫𐵬𐵭𐵮𐵯𐵰𐵱𐵲𐵳𐵴𐵵𐵶𐵷𐵸𐵹𐵺𐵻𐵼𐵽𐵾𐵿𐶀𐶁𐶂𐶃𐶄𐶅𐶆𐶇𐶈𐶉𐶊𐶋𐶌𐶍𐶎𐶏𐶐𐶑𐶒𐶓𐶔𐶕𐶖𐶗𐶘𐶙𐶚𐶛𐶜𐶝𐶞𐶟𐶠𐶡𐶢𐶣𐶤𐶥𐶦𐶧𐶨𐶩𐶪𐶫𐶬𐶭𐶮𐶯𐶰𐶱𐶲𐶳𐶴𐶵𐶶𐶷𐶸𐶹𐶺𐶻𐶼𐶽𐶾𐶿𐷀𐷁𐷂𐷃𐷄𐷅𐷆𐷇𐷈𐷉𐷊𐷋𐷌𐷍𐷎𐷏𐷐𐷑𐷒𐷓𐷔𐷕𐷖𐷗𐷘𐷙𐷚𐷛𐷜𐷝𐷞𐷟𐷠𐷡𐷢𐷣𐷤𐷥𐷦𐷧𐷨𐷩𐷪𐷫𐷬𐷭𐷮𐷯𐷰𐷱𐷲𐷳𐷴𐷵𐷶𐷷𐷸𐷹𐷺𐷻𐷼𐷽𐷾𐷿𐸀𐸁𐸂𐸃𐸄𐸅𐸆𐸇𐸈𐸉𐸊𐸋𐸌𐸍𐸎𐸏𐸐𐸑𐸒𐸓𐸔𐸕𐸖𐸗𐸘𐸙𐸚𐸛𐸜𐸝𐸞𐸟𐸠𐸡𐸢𐸣𐸤𐸥𐸦𐸧𐸨𐸩𐸪𐸫𐸬𐸭𐸮𐸯𐸰𐸱𐸲𐸳𐸴𐸵𐸶𐸷𐸸𐸹𐸺𐸻𐸼𐸽𐸾𐸿𐹀𐹁𐹂𐹃𐹄𐹅𐹆𐹇𐹈𐹉𐹊𐹋𐹌𐹍𐹎𐹏𐹐𐹑𐹒𐹓𐹔𐹕𐹖𐹗𐹘𐹙𐹚𐹛𐹜𐹝𐹞𐹟𐹠𐹡𐹢𐹣𐹤𐹥𐹦𐹧𐹨𐹩𐹪𐹫𐹬𐹭𐹮𐹯𐹰𐹱𐹲𐹳𐹴𐹵𐹶𐹷𐹸𐹹𐹺𐹻𐹼𐹽𐹾𐹿𐺀𐺁𐺂𐺃𐺄𐺅𐺆𐺇𐺈𐺉𐺊𐺋𐺌𐺍𐺎𐺏𐺐𐺑𐺒𐺓𐺔𐺕𐺖𐺗𐺘𐺙𐺚𐺛𐺜𐺝𐺞𐺟𐺠𐺡𐺢𐺣𐺤𐺥𐺦𐺧𐺨𐺩𐺪𐺫𐺬𐺭𐺮𐺯𐺰𐺱𐺲𐺳𐺴𐺵𐺶𐺷𐺸𐺹𐺺𐺻𐺼𐺽𐺾𐺿𐻀𐻁𐻂𐻃𐻄𐻅𐻆𐻇𐻈𐻉𐻊𐻋𐻌𐻍𐻎𐻏𐻐𐻑𐻒𐻓𐻔𐻕𐻖𐻗𐻘𐻙𐻚𐻛𐻜𐻝𐻞𐻟𐻠𐻡𐻢𐻣𐻤𐻥𐻦𐻧𐻨𐻩𐻪𐻫𐻬𐻭𐻮𐻯𐻰𐻱𐻲𐻳𐻴𐻵𐻶𐻷𐻸𐻹𐻺𐻻𐻼𐻽𐻾𐻿𐼀𐼁𐼂𐼃𐼄𐼅𐼆𐼇𐼈𐼉𐼊𐼋𐼌𐼍𐼎𐼏𐼐𐼑𐼒𐼓𐼔𐼕𐼖𐼗𐼘𐼙𐼚𐼛𐼜𐼝𐼞𐼟𐼠𐼡𐼢𐼣𐼤𐼥𐼦𐼧𐼨𐼩𐼪𐼫𐼬𐼭𐼮𐼯𐼰𐼱𐼲𐼳𐼴𐼵𐼶𐼷𐼸𐼹𐼺𐼻𐼼𐼽𐼾𐼿𐽀𐽁𐽂𐽃𐽄𐽅𐽆𐽇𐽋𐽍𐽎𐽏𐽐𐽈𐽉𐽊𐽌𐽑𐽒𐽓𐽔𐽕𐽖𐽗𐽘𐽙𐽚𐽛𐽜𐽝𐽞𐽟𐽠𐽡𐽢𐽣𐽤𐽥𐽦𐽧𐽨𐽩𐽪𐽫𐽬𐽭𐽮𐽯𐽰𐽱𐽲𐽳𐽴𐽵𐽶𐽷𐽸𐽹𐽺𐽻𐽼𐽽𐽾𐽿𐾀𐾁𐾃𐾅𐾂𐾄𐾆𐾇𐾈𐾉𐾊𐾋𐾌𐾍𐾎𐾏𐾐𐾑𐾒𐾓𐾔𐾕𐾖𐾗𐾘𐾙

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5-dish 𐎠𐎠𐎠𐎠	a ni 𐎠𐎡𐎢𐎣𐎤𐎥𐎦𐎧𐎨𐎩𐎪𐎫𐎬𐎭𐎮𐎯𐎰𐎱𐎲𐎳𐎴𐎵𐎶𐎷𐎸𐎹𐎺𐎻𐎼𐎽𐎾𐎿𐏀𐏁𐏂𐏃𐏄𐏅𐏆𐏇𐏈𐏉𐏊𐏋𐏌𐏍𐏎𐏏𐏐𐏑𐏒𐏓𐏔𐏕𐏖𐏗𐏘𐏙𐏚𐏛𐏜𐏝𐏞𐏟𐏠𐏡𐏢𐏣𐏤𐏥𐏦𐏧𐏨𐏩𐏪𐏫𐏬𐏭𐏮𐏯𐏰𐏱𐏲𐏳𐏴𐏵𐏶𐏷𐏸𐏹𐏺𐏻𐏼𐏽𐏾𐏿𐐀𐐁𐐂𐐃𐐄𐐅𐐆𐐇𐐈𐐉𐐊𐐋𐐌𐐍𐐎𐐏𐐐𐐑𐐒𐐓𐐔𐐕𐐖𐐗𐐘𐐙𐐚𐐛𐐜𐐝𐐞𐐟𐐠𐐡𐐢𐐣𐐤𐐥𐐦𐐧𐐨𐐩𐐪𐐫𐐬𐐭𐐮𐐯𐐰𐐱𐐲𐐳𐐴𐐵𐐶𐐷𐐸𐐹𐐺𐐻𐐼𐐽𐐾𐐿𐑀𐑁𐑂𐑃𐑄𐑅𐑆𐑇𐑈𐑉𐑊𐑋𐑌𐑍𐑎𐑏𐑐𐑑𐑒𐑓𐑔𐑕𐑖𐑗𐑘𐑙𐑚𐑛𐑜𐑝𐑞𐑟𐑠𐑡𐑢𐑣𐑤𐑥𐑦𐑧𐑨𐑩𐑪𐑫𐑬𐑭𐑮𐑯𐑰𐑱𐑲𐑳𐑴𐑵𐑶𐑷𐑸𐑹𐑺𐑻𐑼𐑽𐑾𐑿𐒀𐒁𐒂𐒃𐒄𐒅𐒆𐒇𐒈𐒉𐒊𐒋𐒌𐒍𐒎𐒏𐒐𐒑𐒒𐒓𐒔𐒕𐒖𐒗𐒘𐒙𐒚𐒛𐒜𐒝𐒞𐒟𐒠𐒡𐒢𐒣𐒤𐒥𐒦𐒧𐒨𐒩𐒪𐒫𐒬𐒭𐒮𐒯𐒰𐒱𐒲𐒳𐒴𐒵𐒶𐒷𐒸𐒹𐒺𐒻𐒼𐒽𐒾𐒿𐓀𐓁𐓂𐓃𐓄𐓅𐓆𐓇𐓈𐓉𐓊𐓋𐓌𐓍𐓎𐓏𐓐𐓑𐓒𐓓𐓔𐓕𐓖𐓗𐓘𐓙𐓚𐓛𐓜𐓝𐓞𐓟𐓠𐓡𐓢𐓣𐓤𐓥𐓦𐓧𐓨𐓩𐓪𐓫𐓬𐓭𐓮𐓯𐓰𐓱𐓲𐓳𐓴𐓵𐓶𐓷𐓸𐓹𐓺𐓻𐓼𐓽𐓾𐓿𐔀𐔁𐔂𐔃𐔄𐔅𐔆𐔇𐔈𐔉𐔊𐔋𐔌𐔍𐔎𐔏𐔐𐔑𐔒𐔓𐔔𐔕𐔖𐔗𐔘𐔙𐔚𐔛𐔜𐔝𐔞𐔟𐔠𐔡𐔢𐔣𐔤𐔥𐔦𐔧𐔨𐔩𐔪𐔫𐔬𐔭𐔮𐔯𐔰𐔱𐔲𐔳𐔴𐔵𐔶𐔷𐔸𐔹𐔺𐔻𐔼𐔽𐔾𐔿𐕀𐕁𐕂𐕃𐕄𐕅𐕆𐕇𐕈𐕉𐕊𐕋𐕌𐕍𐕎𐕏𐕐𐕑𐕒𐕓𐕔𐕕𐕖𐕗𐕘𐕙𐕚𐕛𐕜𐕝𐕞𐕟𐕠𐕡𐕢𐕣𐕤𐕥𐕦𐕧𐕨𐕩𐕪𐕫𐕬𐕭𐕮𐕯𐕰𐕱𐕲𐕳𐕴𐕵𐕶𐕷𐕸𐕹𐕺𐕻𐕼𐕽𐕾𐕿𐖀𐖁𐖂𐖃𐖄𐖅𐖆𐖇𐖈𐖉𐖊𐖋𐖌𐖍𐖎𐖏𐖐𐖑𐖒𐖓𐖔𐖕𐖖𐖗𐖘𐖙𐖚𐖛𐖜𐖝𐖞𐖟𐖠𐖡𐖢𐖣𐖤𐖥𐖦𐖧𐖨𐖩𐖪𐖫𐖬𐖭𐖮𐖯𐖰𐖱𐖲𐖳𐖴𐖵𐖶𐖷𐖸𐖹𐖺𐖻𐖼𐖽𐖾𐖿𐗀𐗁𐗂𐗃𐗄𐗅𐗆𐗇𐗈𐗉𐗊𐗋𐗌𐗍𐗎𐗏𐗐𐗑𐗒𐗓𐗔𐗕𐗖𐗗𐗘𐗙𐗚𐗛𐗜𐗝𐗞𐗟𐗠𐗡𐗢𐗣𐗤𐗥𐗦𐗧𐗨𐗩𐗪𐗫𐗬𐗭𐗮𐗯𐗰𐗱𐗲𐗳𐗴𐗵𐗶𐗷𐗸𐗹𐗺𐗻𐗼𐗽𐗾𐗿𐘀𐘁𐘂𐘃𐘄𐘅𐘆𐘇𐘈𐘉𐘊𐘋𐘌𐘍𐘎𐘏𐘐𐘑𐘒𐘓𐘔𐘕𐘖𐘗𐘘𐘙𐘚𐘛𐘜𐘝𐘞𐘟𐘠𐘡𐘢𐘣𐘤𐘥𐘦𐘧𐘨𐘩𐘪𐘫𐘬𐘭𐘮𐘯𐘰𐘱𐘲𐘳𐘴𐘵𐘶𐘷𐘸𐘹𐘺𐘻𐘼𐘽𐘾𐘿𐙀𐙁𐙂𐙃𐙄𐙅𐙆𐙇𐙈𐙉𐙊𐙋𐙌𐙍𐙎𐙏𐙐𐙑𐙒𐙓𐙔𐙕𐙖𐙗𐙘𐙙𐙚𐙛𐙜𐙝𐙞𐙟𐙠𐙡𐙢𐙣𐙤𐙥𐙦𐙧𐙨𐙩𐙪𐙫𐙬𐙭𐙮𐙯𐙰𐙱𐙲𐙳𐙴𐙵𐙶𐙷𐙸𐙹𐙺𐙻𐙼𐙽𐙾𐙿𐚀𐚁𐚂𐚃𐚄𐚅𐚆𐚇𐚈𐚉𐚊𐚋𐚌𐚍𐚎𐚏𐚐𐚑𐚒𐚓𐚔𐚕𐚖𐚗𐚘𐚙𐚚𐚛𐚜𐚝𐚞𐚟𐚠𐚡𐚢𐚣𐚤𐚥𐚦𐚧𐚨𐚩𐚪𐚫𐚬𐚭𐚮𐚯𐚰𐚱𐚲𐚳𐚴𐚵𐚶𐚷𐚸𐚹𐚺𐚻𐚼𐚽𐚾𐚿𐛀𐛁𐛂𐛃𐛄𐛅𐛆𐛇𐛈𐛉𐛊𐛋𐛌𐛍𐛎𐛏𐛐𐛑𐛒𐛓𐛔𐛕𐛖𐛗𐛘𐛙𐛚𐛛𐛜𐛝𐛞𐛟𐛠𐛡𐛢𐛣𐛤𐛥𐛦𐛧𐛨𐛩𐛪𐛫𐛬𐛭𐛮𐛯𐛰𐛱𐛲𐛳𐛴𐛵𐛶𐛷𐛸𐛹𐛺𐛻𐛼𐛽𐛾𐛿𐜀𐜁𐜂𐜃𐜄𐜅𐜆𐜇𐜈𐜉𐜊𐜋𐜌𐜍𐜎𐜏𐜐𐜑𐜒𐜓𐜔𐜕𐜖𐜗𐜘𐜙𐜚𐜛𐜜𐜝𐜞𐜟𐜠𐜡𐜢𐜣𐜤𐜥𐜦𐜧𐜨𐜩𐜪𐜫𐜬𐜭𐜮𐜯𐜰𐜱𐜲𐜳𐜴𐜵𐜶𐜷𐜸𐜹𐜺𐜻𐜼𐜽𐜾𐜿𐝀𐝁𐝂𐝃𐝄𐝅𐝆𐝇𐝈𐝉𐝊𐝋𐝌𐝍𐝎𐝏𐝐𐝑𐝒𐝓𐝔𐝕𐝖𐝗𐝘𐝙𐝚𐝛𐝜𐝝𐝞𐝟𐝠𐝡𐝢𐝣𐝤𐝥𐝦𐝧𐝨𐝩𐝪𐝫𐝬𐝭𐝮𐝯𐝰𐝱𐝲𐝳𐝴𐝵𐝶𐝷𐝸𐝹𐝺𐝻𐝼𐝽𐝾𐝿𐞀𐞁𐞂𐞃𐞄𐞅𐞆𐞇𐞈𐞉𐞊𐞋𐞌𐞍𐞎𐞏𐞐𐞑𐞒𐞓𐞔𐞕𐞖𐞗𐞘𐞙𐞚𐞛𐞜𐞝𐞞𐞟𐞠𐞡𐞢𐞣𐞤𐞥𐞦𐞧𐞨𐞩𐞪𐞫𐞬𐞭𐞮𐞯𐞰𐞱𐞲𐞳𐞴𐞵𐞶𐞷𐞸𐞹𐞺𐞻𐞼𐞽𐞾𐞿𐟀𐟁𐟂𐟃𐟄𐟅𐟆𐟇𐟈𐟉𐟊𐟋𐟌𐟍𐟎𐟏𐟐𐟑𐟒𐟓𐟔𐟕𐟖𐟗𐟘𐟙𐟚𐟛𐟜𐟝𐟞𐟟𐟠𐟡𐟢𐟣𐟤𐟥𐟦𐟧𐟨𐟩𐟪𐟫𐟬𐟭𐟮𐟯𐟰𐟱𐟲𐟳𐟴𐟵𐟶𐟷𐟸𐟹𐟺𐟻𐟼𐟽𐟾𐟿𐠀𐠁𐠂𐠃𐠄𐠅𐠆𐠇𐠈𐠉𐠊𐠋𐠌𐠍𐠎𐠏𐠐𐠑𐠒𐠓𐠔𐠕𐠖𐠗𐠘𐠙𐠚𐠛𐠜𐠝𐠞𐠟𐠠𐠡𐠢𐠣𐠤𐠥𐠦𐠧𐠨𐠩𐠪𐠫𐠬𐠭𐠮𐠯𐠰𐠱𐠲𐠳𐠴𐠵𐠶𐠷𐠸𐠹𐠺𐠻𐠼𐠽𐠾𐠿𐡀𐡁𐡂𐡃𐡄𐡅𐡆𐡇𐡈𐡉𐡊𐡋𐡌𐡍𐡎𐡏𐡐𐡑𐡒𐡓𐡔𐡕𐡖𐡗𐡘𐡙𐡚𐡛𐡜𐡝𐡞𐡟𐡠𐡡𐡢𐡣𐡤𐡥𐡦𐡧𐡨𐡩𐡪𐡫𐡬𐡭𐡮𐡯𐡰𐡱𐡲𐡳𐡴𐡵𐡶𐡷𐡸𐡹𐡺𐡻𐡼𐡽𐡾𐡿𐢀𐢁𐢂𐢃𐢄𐢅𐢆𐢇𐢈𐢉𐢊𐢋𐢌𐢍𐢎𐢏𐢐𐢑𐢒𐢓𐢔𐢕𐢖𐢗𐢘𐢙𐢚𐢛𐢜𐢝𐢞𐢟𐢠𐢡𐢢𐢣𐢤𐢥𐢦𐢧𐢨𐢩𐢪𐢫𐢬𐢭𐢮𐢯𐢰𐢱𐢲𐢳𐢴𐢵𐢶𐢷𐢸𐢹𐢺𐢻𐢼𐢽𐢾𐢿𐣀𐣁𐣂𐣃𐣄𐣅𐣆𐣇𐣈𐣉𐣊𐣋𐣌𐣍𐣎𐣏𐣐𐣑𐣒𐣓𐣔𐣕𐣖𐣗𐣘𐣙𐣚𐣛𐣜𐣝𐣞𐣟𐣠𐣡𐣢𐣣𐣤𐣥𐣦𐣧𐣨𐣩𐣪𐣫𐣬𐣭𐣮𐣯𐣰𐣱𐣲𐣳𐣴𐣵𐣶𐣷𐣸𐣹𐣺𐣻𐣼𐣽𐣾𐣿𐤀𐤁𐤂𐤃𐤄𐤅𐤆𐤇𐤈𐤉𐤊𐤋𐤌𐤍𐤎𐤏𐤐𐤑𐤒𐤓𐤔𐤕𐤖𐤗𐤘𐤙𐤚𐤛𐤜𐤝𐤞𐤟𐤠𐤡𐤢𐤣𐤤𐤥𐤦𐤧𐤨𐤩𐤪𐤫𐤬𐤭𐤮𐤯𐤰𐤱𐤲𐤳𐤴𐤵𐤶𐤷𐤸𐤹𐤺𐤻𐤼𐤽𐤾𐤿𐥀𐥁𐥂𐥃𐥄𐥅𐥆𐥇𐥈𐥉𐥊𐥋𐥌𐥍𐥎𐥏𐥐𐥑𐥒𐥓𐥔𐥕𐥖𐥗𐥘𐥙𐥚𐥛𐥜𐥝𐥞𐥟𐥠𐥡𐥢𐥣𐥤𐥥𐥦𐥧𐥨𐥩𐥪𐥫𐥬𐥭𐥮𐥯𐥰𐥱𐥲𐥳𐥴𐥵𐥶𐥷𐥸𐥹𐥺𐥻𐥼𐥽𐥾𐥿𐦀𐦁𐦂𐦃𐦄𐦅𐦆𐦇𐦈𐦉𐦊𐦋𐦌𐦍𐦎𐦏𐦐𐦑𐦒𐦓𐦔𐦕𐦖𐦗𐦘𐦙𐦚𐦛𐦜𐦝𐦞𐦟𐦠𐦡𐦢𐦣𐦤𐦥𐦦𐦧𐦨𐦩𐦪𐦫𐦬𐦭𐦮𐦯𐦰𐦱𐦲𐦳𐦴𐦵𐦶𐦷𐦸𐦹𐦺𐦻𐦼𐦽𐦾𐦿𐧀𐧁𐧂𐧃𐧄𐧅𐧆𐧇𐧈𐧉𐧊𐧋𐧌𐧍𐧎𐧏𐧐𐧑𐧒𐧓𐧔𐧕𐧖𐧗𐧘𐧙𐧚𐧛𐧜𐧝𐧞𐧟𐧠𐧡𐧢𐧣𐧤𐧥𐧦𐧧𐧨𐧩𐧪𐧫𐧬𐧭𐧮𐧯𐧰𐧱𐧲𐧳𐧴𐧵𐧶𐧷𐧸𐧹𐧺𐧻𐧼𐧽𐧾𐧿𐨀𐨁𐨂𐨃𐨄𐨅𐨆𐨇𐨈𐨉𐨊𐨋𐨌𐨍𐨎𐨏𐨐𐨑𐨒𐨓𐨔𐨕𐨖𐨗𐨘𐨙𐨚𐨛𐨜𐨝𐨞𐨟𐨠𐨡𐨢𐨣𐨤𐨥𐨦𐨧𐨨𐨩𐨪𐨫𐨬𐨭𐨮𐨯𐨰𐨱𐨲𐨳𐨴𐨵𐨶𐨷𐨹𐨺𐨸𐨻𐨼𐨽𐨾𐨿𐩀𐩁𐩂𐩃𐩄𐩅𐩆𐩇𐩈𐩉𐩊𐩋𐩌𐩍𐩎𐩏𐩐𐩑𐩒𐩓𐩔𐩕𐩖𐩗𐩘𐩙𐩚𐩛𐩜𐩝𐩞𐩟𐩠𐩡𐩢𐩣𐩤𐩥𐩦𐩧𐩨𐩩𐩪𐩫𐩬𐩭𐩮𐩯𐩰𐩱𐩲𐩳𐩴𐩵𐩶𐩷𐩸𐩹𐩺𐩻𐩼𐩽𐩾𐩿𐪀𐪁𐪂𐪃𐪄𐪅𐪆𐪇𐪈𐪉𐪊𐪋𐪌𐪍𐪎𐪏𐪐𐪑𐪒𐪓𐪔𐪕𐪖𐪗𐪘𐪙𐪚𐪛𐪜𐪝𐪞𐪟𐪠𐪡𐪢𐪣𐪤𐪥𐪦𐪧𐪨𐪩𐪪𐪫𐪬𐪭𐪮𐪯𐪰𐪱𐪲𐪳𐪴𐪵𐪶𐪷𐪸𐪹𐪺𐪻𐪼𐪽𐪾𐪿𐫀𐫁𐫂𐫃𐫄𐫅𐫆𐫇𐫈𐫉𐫊𐫋𐫌𐫍𐫎𐫏𐫐𐫑𐫒𐫓𐫔𐫕𐫖𐫗𐫘𐫙𐫚𐫛𐫜𐫝𐫞𐫟𐫠𐫡𐫢𐫣𐫤𐫦𐫥𐫧𐫨𐫩𐫪𐫫𐫬𐫭𐫮𐫯𐫰𐫱𐫲𐫳𐫴𐫵𐫶𐫷𐫸𐫹𐫺𐫻𐫼𐫽𐫾𐫿𐬀𐬁𐬂𐬃𐬄𐬅𐬆𐬇𐬈𐬉𐬊𐬋𐬌𐬍𐬎𐬏𐬐𐬑𐬒𐬓𐬔𐬕𐬖𐬗𐬘𐬙𐬚𐬛𐬜𐬝𐬞𐬟𐬠𐬡𐬢𐬣𐬤𐬥𐬦𐬧𐬨𐬩𐬪𐬫𐬬𐬭𐬮𐬯𐬰𐬱𐬲𐬳𐬴𐬵𐬶𐬷𐬸𐬹𐬺𐬻𐬼𐬽𐬾𐬿𐭀𐭁𐭂𐭃𐭄𐭅𐭆𐭇𐭈𐭉𐭊𐭋𐭌𐭍𐭎𐭏𐭐𐭑𐭒𐭓𐭔𐭕𐭖𐭗𐭘𐭙𐭚𐭛𐭜𐭝𐭞𐭟𐭠𐭡𐭢𐭣𐭤𐭥𐭦𐭧𐭨𐭩𐭪𐭫𐭬𐭭𐭮𐭯𐭰𐭱𐭲𐭳𐭴𐭵𐭶𐭷𐭸𐭹𐭺𐭻𐭼𐭽𐭾𐭿𐮀𐮁𐮂𐮃𐮄𐮅𐮆𐮇𐮈𐮉𐮊𐮋𐮌𐮍𐮎𐮏𐮐𐮑𐮒𐮓𐮔𐮕𐮖𐮗𐮘𐮙𐮚𐮛𐮜𐮝𐮞𐮟𐮠𐮡𐮢𐮣𐮤𐮥𐮦𐮧𐮨𐮩𐮪𐮫𐮬𐮭𐮮𐮯𐮰𐮱𐮲𐮳𐮴𐮵𐮶𐮷𐮸𐮹𐮺𐮻𐮼𐮽𐮾𐮿𐯀𐯁𐯂𐯃𐯄𐯅𐯆𐯇𐯈𐯉𐯊𐯋𐯌𐯍𐯎𐯏𐯐𐯑𐯒𐯓𐯔𐯕𐯖𐯗𐯘𐯙𐯚𐯛𐯜𐯝𐯞𐯟𐯠𐯡𐯢𐯣𐯤𐯥𐯦𐯧𐯨𐯩𐯪𐯫𐯬𐯭𐯮𐯯𐯰𐯱𐯲𐯳𐯴𐯵𐯶𐯷𐯸𐯹𐯺𐯻𐯼𐯽𐯾𐯿𐰀𐰁𐰂𐰃𐰄𐰅𐰆𐰇𐰈𐰉𐰊𐰋𐰌𐰍𐰎𐰏𐰐𐰑𐰒𐰓𐰔𐰕𐰖𐰗𐰘𐰙𐰚𐰛𐰜𐰝𐰞𐰟𐰠𐰡𐰢𐰣𐰤𐰥𐰦𐰧𐰨𐰩𐰪𐰫𐰬𐰭𐰮𐰯𐰰𐰱𐰲𐰳𐰴𐰵𐰶𐰷𐰸𐰹𐰺𐰻𐰼𐰽𐰾𐰿𐱀𐱁𐱂𐱃𐱄𐱅𐱆𐱇𐱈𐱉𐱊𐱋𐱌𐱍𐱎𐱏𐱐𐱑𐱒𐱓𐱔𐱕𐱖𐱗𐱘𐱙𐱚𐱛𐱜𐱝𐱞𐱟𐱠𐱡𐱢𐱣𐱤𐱥𐱦𐱧𐱨𐱩𐱪𐱫𐱬𐱭𐱮𐱯𐱰𐱱𐱲𐱳𐱴𐱵𐱶𐱷𐱸𐱹𐱺𐱻𐱼𐱽𐱾𐱿𐲀𐲁𐲂𐲃𐲄𐲅𐲆𐲇𐲈𐲉𐲊𐲋𐲌𐲍𐲎𐲏𐲐𐲑𐲒𐲓𐲔𐲕𐲖𐲗𐲘𐲙𐲚𐲛𐲜𐲝𐲞𐲟𐲠𐲡𐲢𐲣𐲤𐲥𐲦𐲧𐲨𐲩𐲪𐲫𐲬𐲭𐲮𐲯𐲰𐲱𐲲𐲳𐲴𐲵𐲶𐲷𐲸𐲹𐲺𐲻𐲼𐲽𐲾𐲿𐳀𐳁𐳂𐳃𐳄𐳅𐳆𐳇𐳈𐳉𐳊𐳋𐳌𐳍𐳎𐳏𐳐𐳑𐳒𐳓𐳔𐳕𐳖𐳗𐳘𐳙𐳚𐳛𐳜𐳝𐳞𐳟𐳠𐳡𐳢𐳣𐳤𐳥𐳦𐳧𐳨𐳩𐳪𐳫𐳬𐳭𐳮𐳯𐳰𐳱𐳲𐳳𐳴𐳵𐳶𐳷𐳸𐳹𐳺𐳻𐳼𐳽𐳾𐳿𐴀𐴁𐴂𐴃𐴄𐴅𐴆𐴇𐴈𐴉𐴊𐴋𐴌𐴍𐴎𐴏𐴐𐴑𐴒𐴓𐴔𐴕𐴖𐴗𐴘𐴙𐴚𐴛𐴜𐴝𐴞𐴟𐴠𐴡𐴢𐴣𐴤𐴥𐴦𐴧𐴨𐴩𐴪𐴫𐴬𐴭𐴮𐴯𐴰𐴱𐴲𐴳𐴴𐴵𐴶𐴷𐴸𐴹𐴺𐴻𐴼𐴽𐴾𐴿𐵀𐵁𐵂𐵃𐵄𐵅𐵆𐵇𐵈𐵉𐵊𐵋𐵌𐵍𐵎𐵏𐵐𐵑𐵒𐵓𐵔𐵕𐵖𐵗𐵘𐵙𐵚𐵛𐵜𐵝𐵞𐵟𐵠𐵡𐵢𐵣𐵤𐵥𐵦𐵧𐵨𐵩𐵪𐵫𐵬𐵭𐵮𐵯𐵰𐵱𐵲𐵳𐵴𐵵𐵶𐵷𐵸𐵹𐵺𐵻𐵼𐵽𐵾𐵿𐶀𐶁𐶂𐶃𐶄𐶅𐶆𐶇𐶈𐶉𐶊𐶋𐶌𐶍𐶎𐶏𐶐𐶑𐶒𐶓𐶔𐶕𐶖𐶗𐶘𐶙𐶚𐶛𐶜𐶝𐶞𐶟𐶠𐶡𐶢𐶣𐶤𐶥𐶦𐶧𐶨𐶩𐶪𐶫𐶬𐶭𐶮𐶯𐶰𐶱𐶲𐶳𐶴𐶵𐶶𐶷𐶸𐶹𐶺𐶻𐶼𐶽𐶾𐶿𐷀𐷁𐷂𐷃𐷄𐷅𐷆𐷇𐷈𐷉𐷊𐷋𐷌𐷍𐷎𐷏𐷐𐷑𐷒𐷓𐷔𐷕𐷖𐷗𐷘𐷙𐷚𐷛𐷜𐷝𐷞𐷟𐷠𐷡𐷢𐷣𐷤𐷥𐷦𐷧𐷨𐷩𐷪𐷫𐷬𐷭𐷮𐷯𐷰𐷱𐷲𐷳𐷴𐷵𐷶𐷷𐷸𐷹𐷺𐷻𐷼𐷽𐷾𐷿𐸀𐸁𐸂𐸃𐸄𐸅𐸆𐸇𐸈𐸉𐸊𐸋𐸌𐸍𐸎𐸏𐸐𐸑𐸒𐸓𐸔𐸕𐸖𐸗𐸘𐸙𐸚𐸛𐸜𐸝𐸞𐸟𐸠𐸡𐸢𐸣𐸤𐸥𐸦𐸧𐸨𐸩𐸪𐸫𐸬𐸭𐸮𐸯𐸰𐸱𐸲𐸳𐸴𐸵𐸶𐸷𐸸𐸹𐸺𐸻𐸼𐸽𐸾𐸿𐹀𐹁𐹂𐹃𐹄𐹅𐹆𐹇𐹈𐹉𐹊𐹋𐹌𐹍𐹎𐹏𐹐𐹑𐹒𐹓𐹔𐹕𐹖𐹗𐹘𐹙𐹚𐹛𐹜𐹝𐹞𐹟𐹠𐹡𐹢𐹣𐹤𐹥𐹦𐹧𐹨𐹩𐹪𐹫𐹬𐹭𐹮𐹯𐹰𐹱𐹲𐹳𐹴𐹵𐹶𐹷𐹸𐹹𐹺𐹻𐹼𐹽𐹾𐹿𐺀𐺁𐺂𐺃𐺄𐺅𐺆𐺇𐺈𐺉𐺊𐺋𐺌𐺍𐺎𐺏𐺐𐺑𐺒𐺓𐺔𐺕𐺖𐺗𐺘𐺙𐺚𐺛𐺜𐺝𐺞𐺟𐺠𐺡𐺢𐺣𐺤𐺥𐺦𐺧𐺨𐺩𐺪𐺫𐺬𐺭𐺮𐺯𐺰𐺱𐺲𐺳𐺴𐺵𐺶𐺷𐺸𐺹𐺺𐺻𐺼𐺽𐺾𐺿𐻀𐻁𐻂𐻃𐻄𐻅𐻆𐻇𐻈𐻉𐻊𐻋𐻌𐻍𐻎𐻏𐻐𐻑𐻒𐻓𐻔𐻕𐻖𐻗𐻘𐻙𐻚𐻛𐻜𐻝𐻞𐻟

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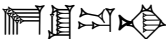
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
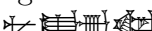







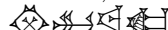





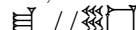








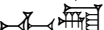






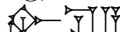
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