# Hyphenation Patterns for Ancient Greek and Latin 

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| Min-nesota | Min-ne-sota |
| :--- | :--- |
| Ni-jmegen | Nij-me-gen |
| Noethe-rian | Noe-ther-ian |
| No-ord-wi-jk-er-hout | Noord-wijker-hout |
| Novem-ber | No-vem-ber |
| Poincare | Poin-care |
| Po-ten-tial-gle-ichung | Po-ten-tial-glei-chung |
| rathskeller | raths-kel-ler |
| Rie-man-nian | Rie-mann-ian |
| Ry-d-berg | Ryd-berg |
| schot-tis-che | schot-tische |
| Schrodinger | Schro-ding-er |
| Schwabacher | Schwa-ba-cher |
| Schwarzschild | Schwarz-schild |
| Septem-ber | Sep-tem-ber |
| Stokess-che | Stokes-sche |
| Susque-hanna | Sus-que-han-na |
| tech-nis-che | tech-ni-sche |
| Ten-nessee | Ten-nes-see |
| ve-r-all-ge-mein-erte | ver-all-ge-mein-erte |
| Verteilun-gen | Ver-tei-lun-gen |
| Wahrschein-lichkeit-s-the-o-rie |  |
|  | Wahr-schein-lich-keits-the-o-rie |
| Werthe-rian | Wer-ther-ian |
| Winch-ester | Win-ches-ter |
| Yingy-ong Shuxue Jisuan | Ying-yong Shu-xue Ji-suan |
| Zeitschrift | Zeit-schrift |

## Literate Programming

## Errata: Literate Programming, A Practitioner's View TUGboat 13, no. 3, pp. 261-268

## Bart Childs

The address lyman.pppl.princeton.edu should have read lyman.pppl.gov (a careless error on my part). The address csseq.cs.tamu.edu no longer permits anonymous ftp. Due to some network breakins from different places, extensive local network changes are being done and relevant sources will be placed on ftp.cs.tamu. edu no later than January 1993. The author will e-mail any desired sources in the meantime.

[^0]
## Philology

## Hyphenation patterns for ancient Greek and Latin <br> Yannis Haralambous

The amount of compound words in ancient Greek makes its hyphenation by computer a quite difficult task; it is impossible to predict all combinations of words. To be efficient, a set of patterns must be accessible to the final user; a scholar must be able to add patterns, according to new words he/she encounters. Use of TEX's \hyphenation primitive is not appropriate since most Greek words are declinable: for each word one would have to add a dozen hyphenation exceptions.

After a short introduction to the concept of hyphenation by $T_{E} X$ the author presents a method for hyphenation of ancient Greek. Using this method, he compiled a list of patterns out of a dictionary [Bai] of 50,000 words. These patterns are presented in a comprehensible format, in a way that scholars can easily determine the patterns that have to be added, to solve specific hyphenation problems.

The same approach is applied to Latin. A list of patterns has been compiled out of a dictionary $[\mathrm{B}-\mathrm{C}]$. The size of this list is very small compared to the one of ancient Greek patterns, although Latin also uses compound words.

Finally examples of hyphenated classical texts are given.

1 What do I have to know about hyphenation?
When TEX creates a format like Plain or LaTeX it also reads information from a file called hyphen. tex (or UShyphen.tex, or FRhyphen.tex and so forth) which contains the hyphenation patterns for a specific language. These are clusters consisting of letters separated by digits, like x 1 y 2 z . The idea is the following:

- if your set of patterns is empty, there is no hyphenation at all.
- if you have a pattern xiy then on every occurrence of the cluster "xy", hyphenation "x-y" will be possible. If the pattern is $x 1 y z w$, then the pair of letters "xy" will be hyphenated only when followed by " $z w$ ".
- if there is a pattern x 1 y and a pattern x 2 yabc , then the pair "xy" will be hyphenated, except when it is followed by "abc". So the digit 2 indicates an exception to the rule "separate $x$ and $y "$.
- the same holds for greater numbers: 3 will be an exception of patterns with number 2, and so on. You can now read [DEK], pp. 449-451, for more details on TEX's hyphenation algorithm.
- a dot in front of (or behind) a pattern specifies that the latter is valid only at the beginning (or the end) of a word. In this way, for example, .$x y 2 z$. will be applied only to the word 'xyz'.
Despite the existence of some fundamental rules, hyphenation of a particular language can be very complicated, especially when it depends on etymological criteria. There are two ways to handle this complexity: one can investigate the hidden mechanisms of hyphenation and make patterns correspond to the analytical steps of manual hyphenation; or one can use a "pattern generator" like PATGEN on a sufficiently representative set of already hyphenated words. The choice of the method depends on the nature of the language and on the size of the available set of hyphenated words: theoretically one could create a file containing all words of a particular language in hyphenated form; the pattern generator would then give an exhaustive set of patterns. Since it is more probable to have partial sets of words, the "pattern generator" will only produce more or less good approximations. For ancient Greek and Latin, the author has chosen the first method.


## 2 Why is hyphenation of ancient Greek so difficult for a computer?

As mentioned in TUGboat 11, no. 1, since 1990 patterns have existed for modern Greek (made by the author). What then makes hyphenation of ancient Greek so different? Why is it so difficult?

First of all, because of compound words. The difficulty lies in the fact that components are often altered when composed: $\bar{\varepsilon} \pi i$ and $\alpha i v \widetilde{\omega}$ gives $\bar{\varepsilon} \pi \alpha \omega \nu \widetilde{\omega}$ (not $\dot{\varepsilon} \pi \iota \alpha \omega \widetilde{\omega}$ ) while $\dot{\varepsilon} \pi i$ composed with $\beta \dot{\alpha} \lambda \lambda \omega$ produces $\varepsilon$ è $\pi \beta \dot{\alpha} \lambda \lambda \omega$. Could we hence hyphenate always $\varepsilon \pi-\alpha$ and $\varepsilon \pi t-$ ? well, actually not, because there is also the case of $\varepsilon \pi i+i \alpha \lambda \lambda \omega=\bar{\varepsilon} \pi \tau \dot{\alpha} \lambda \lambda \omega$ which is hyphenated $\varepsilon$ ह่ $\pi-\iota \alpha \lambda \lambda \omega$. Then perhaps we could produce patterns for roots, like - $\alpha, v$, to insure hyphenation of $\varepsilon \pi \tau-\alpha i v o \varsigma, x \alpha \tau-\alpha i v \varepsilon \sigma L \zeta, \phi \varepsilon \cup \delta-\alpha i v \bar{\omega}$ and so forth? No, because this would produce wrong hyphenation of $\dot{\alpha}-\sigma \theta \mu \alpha i-\nu \omega, \sigma r_{-}-\mu \alpha i-\nu \omega, \dot{i}-\varphi \alpha i-\nu \omega \ldots$

A second problem is declension and diacritics. While the latter are provided to facilitate
comprehension of a word, they rather obstruct the work of the computer. Because for the computer $\alpha, \dot{\alpha}, \dot{\alpha}, \tilde{\alpha}, \dot{\alpha}, \dot{\alpha}$, etc., are distinct entities. So $\dot{\varepsilon} \pi \varepsilon i$ and $\dot{\varepsilon} \pi \varepsilon!$ are to be treated as entirely distinct words. In most languages declension affects only endings of words: здание, здания, зданию, здание, зданием, здании and so forth. In Greek, the root of the word remains mostly the same (ex-

 lows that when creating patterns, one must consider all possible diacritics and their positions.

To illustrate this, here is an example of two words which look very similar but are hyphenated in two different ways:

$$
\begin{gathered}
\ddot{\alpha} \psi \text {-oppos (from } \ddot{\alpha} \psi \text { and őpvupu) } \\
\text { and } \\
\dot{\alpha} \psi o ́-p p o o s ~(o r ~ \\
\alpha \\
\text { óppous, from } \ddot{\alpha} \psi \text { and } \hat{\rho} \dot{\varepsilon} \omega) .
\end{gathered}
$$

We will decline them and try to extract the necessary patterns so that $\mathrm{TEX}_{\mathrm{E}}$ can correctly hyphenate them, in all cases ${ }^{1}$ :

| ¢ | *̈форроऽ | б | ¢̀ $\downarrow$ о́ppoos |
| :---: | :---: | :---: | :---: |
| т๐บั | à\&óppou | тоบ̃ | «¢орpóou |
| $\tau \bar{\omega}$ | à\$óppu | $\tau \widetilde{\varphi}$ | ג̇форpów |
| tov | *¢¢оpov | tòv | ¢̇фóppoov |
| $\widetilde{\omega}$ |  | $\omega$ | a¢о́ppos |
| oi | ${ }^{2}$ ¢ $\psi$ орpor | oi |  |
| $\tau \widetilde{\nu}$ | à\$óppuv | $\tau \widetilde{\omega}$ | àорро́wv |
| toic | ¿¢о́ppous | tois | «фороо́ors |
| tous | àóppous | тoùs | àфорpóous |
| $\widetilde{\omega}$ | «̈форpot | $\widetilde{\omega}$ |  |

For the word $\alpha \not \alpha o p p o s$ it would be enough to introduce patterns $\alpha \not \psi$-opp and $\dot{\alpha} \psi$-ópp. In this case, the word $\dot{\alpha} \psi o ́ p p o o s$ would be wrongly hyphenated. To distinguish this word we must include an o at the end of the pattern, and hence introduce the pattern $\dot{\alpha} \not \phi_{o}^{\prime}-p \rho o$. This would again change the hyphenation of the genitive case of ${ }_{\alpha}^{\alpha} \psi o p p o s, ~ n a m e l y ~ \dot{\alpha} \psi o ́ p p o u$. For this reason we will rather use the pattern $\alpha \psi o ́-p p o o$. This has the advantage of not interfering with the hyphenation of ${ }^{2} \psi o p p o s$, but cannot be applied to the vocative case of $\dot{\alpha} \notin o ́ p p o o s . ~ F o r ~ t h i s, ~ w e ~ n e e d ~ a ~$ second pattern $\dot{\alpha} \not \chi_{o}^{\prime}-p p o \varepsilon$, which is actually the whole word. In the remaining cases of àóppoos, the accent is on the penultimate syllable ppo. But the word \% $\psi$ oppos is never accented on that syllable, so that an unaccented pattern like $\alpha \nless 0-p p$ would apply only

[^1]to the genitive, dative and plural accusative cases of幺фо́ppoos.

Using this method, we found five patterns:

The reader can verify that with these, all cases of both words are correctly hyphenated.

The example illustrates another fact: when writing down new patterns, one must constantly compare the newly hyphenated words with the ones which produced the previous patterns, so that conflicts can be avoided.

Finally there are some rare cases where identical words have different meanings and different hyphenations: $\ddot{\alpha}$-vootos from $\dot{\alpha}$ and vóotos, ${ }^{\alpha} v$-ootos
 (Venitian).

## 3 The fundamental rules of ancient Greek hyphenation, and the corresponding patterns

The Chicago Manual of Style ([Chi], 9.130) asserts that: In [ancient] Greek, WORD DIVISION FOLLOWS RULES THAT ARE STRAIGHTFORWARD AND FAIRLY EASY TO APPLY.

Here are the rules following this quotation in [Chi], and the necessary patterns ( $v_{n}, n \geq 1$ will be vowels and $c_{n}, n \geq 1$ consonants):

1. When a single consonant occurs beTWEEN TWO VOWELS, DIVIDE BEFORE THE CONSONANT: $v_{1}-c v_{2}$. The necessary patterns will be $\alpha 1 \beta, \alpha l \gamma, \alpha 1 \delta, \ldots \omega 1 \psi$ where vowels are taken with all possible combinations of accents, spirits, diæresis and subscript iota. These patterns cover also the case of a vowel followed by more than one consonant; this feature will be useful in rule 4.
2. If a Consonant is doubled, or if a mute IS FOLLOWED BY ITS CORRESPONDING ASPIRATE, DIVIDE AFTER THE FIRST CONSONANT: $v_{1} c_{1} c_{2} v_{2}$ for $c_{1}=c_{2}$, or $\left(c_{1}, c_{2}\right) \in$ $\{(\pi, \varphi),(\tau, \theta),(\alpha, \chi),(\gamma, \chi)\}$. The patterns will be $2 \beta 1 \beta, 2 \gamma 1 \gamma \ldots 2 \psi 1 \psi$ for the first part of the rule, and $2 \pi 1 \varphi, 2 \tau 1 \theta, 2 \alpha 1 \gamma, 2 \gamma 1 \chi$ for the second. For grammatical reasons, it would be best to exclude $2 \rho 1 \rho$ (and $2 \rho 1 \rho$ ) from these patterns.
3. IF THE COMBINATION OF TWO OR MORE CONSONANTS BEGINS WITH A LIQUID OR A NASAL, DIVIDE AFTER THE LIQUID OR NASAL [although not stated in the rule, it follows from the examples given in [Chi] that two consecutive nasals should not be separated]: $v_{1} c_{1}-c_{2} \ldots c_{n} v_{2}$, for $c_{1} \in\{\lambda, \rho, \mu, \nu\}$ but $v_{1}-c_{1} \ldots c_{n} v_{2}$ if $\left(c_{1}, c_{2}\right)=$
$(\mu, \nu)$. The required patterns are $2 \lambda 1 \beta, 2 \lambda 1 \gamma \ldots$ $2 \nu 1 \psi$ (except of course $2 \lambda 1 \lambda, 2 p 1 \rho, 2 \mu 1 \mu, 2 \nu 1 \nu$ which have been taken into account in rule 2), and $2 \mu 1 v$.
4. The division comes before all other COMBINATIONS OF TWO OR MORE CONSONants. We do not need any additional patterns to handle this rule; for example in the word $\propto \alpha \sigma p o \nu$, the cluster $\alpha \sigma$ will be hyphenated because of rule 1 , and clusters $\sigma \tau, \tau \rho$, $\rho \circ$ will not be hyphenated, because they do not appear in any previous pattern list. Theoretically, a problem could occur in the case of a combination of 3 or more consonants containing a cluster mentioned in rules 2 or 3 . But this is highly improbable and should be taken as an exception.
5. COMPOUND WORDS ARE DIVIDED INTO THEIR ORIGINAL PARTS; WITHIN EACH PART THE FOREGOING RULES APPLY. The patterns needed to fulfill this rule will be discussed in next section.
It might be interesting to point out that the rules specified by the Academy of Athens in 1939
 different from the ones above. According to this set of rules, compound words are separated, except when an eclipse has occurred: $\pi \alpha \rho \varepsilon \dot{\varepsilon} \chi \omega$ is hyphenated as if it was a simple word: $\pi \alpha-\rho \varepsilon$ - $\chi \omega$, instead of $\pi \alpha \rho-$ $\varepsilon \chi \omega$ as suggested in [Chi]. Following the rules of the Academy of Athens would result in a completely different set of patterns, since the eclipse phenomenon occurs very often.

The patterns we have introduced thus far are not sufficient for fundamental hyphenation. We still must introduce two families of patterns:

- Pairs of vowels are to be separated, except in the case of diphthongs. This leads to patterns $\alpha 1 \alpha, \alpha 1 \varepsilon, \alpha 1 \eta, \alpha 17 \ldots \omega 1 \omega$ including all diacriticized vowels.
- In Greek, the smallest part of a word remaining on a line is a syllable. This may shock a $\mathrm{T}_{\mathrm{EX}}$ user, but hyphenations like $\dot{\alpha}$ - $\pi p o \sigma \alpha ́ p \mu o \sigma \tau o \varsigma ~ a n d ~$
 found in books. The problem is that by setting \lefthyphenmin and \righthyphenmin equal to 1 , one can eventually separate single consonants, which do not form syllables: $\delta \tilde{\omega} \rho o-v$ is TEXnically allowed, since \righthyphenmin=1, but should be avoided. For this we just have to introduce patterns $2 \beta$. $2 \delta$. .. $2 \psi$. [or even $6 \beta ., 6 \delta . \ldots 6 \psi$. to be sure that no forthcoming exception will affect them].

What remains now are patterns concerning separation of compound words, according to rule 5 . These are described in the following section.

## 4 Hyphenation of ancient Greek compound words

No puede combinar unos caracteres dhemrlchtdj que la divina Biblioteca no haya previsto $y$ que en alguna de sus lenguas secretas no encierren un terrible sentido...
writes J. L. Borges in the "Biblioteca de Babel"; the situation is similar for ancient (or modern) Greek compound words. By combining words one can easily exceed Mark Twain's
"Mekkamuselmannenmassenmenchenmördermohrenmuttermarmormonumentenmachen",
given in [DEK], p. 451. As already pointed out, one could make patterns out of all possible roots, so that any possible combination of them is correctly hyphenated. The problem is, though, that the combinations of letters forming these roots can also occur inside single words, and only by their meaning can one decide if a particular root is present in a word: $\pi \varepsilon v t n p n s$ is formed by $\pi \varepsilon v t$ - and $-\eta_{p-}$ - (from
 tain the same root -np-. But introducing a pattern $3 \eta 4 \rho 3$ would cause tremendous problems, since thousands of words contain the cluster $\eta \rho$, hyphenated as
 fact is that such patterns should be avoided, or introduced only after extensive investigation.

The author has chosen a different method. Instead of introducing patterns for roots of words, only beginnings of words are taken into account. In this way, when writing for example . $\varepsilon 4 \vee 3$ one can be sure that only words beginning with the prefix $\dot{\varepsilon} v$ will be affected. Exceptions to this rule can easily be found by consulting the dictionary. This method is very effective in hyphenating the most frequent words, but fails when new compound words are to be hyphenated: $\varepsilon \pi-\alpha \omega \widetilde{\omega}$ and $x \alpha \tau-\alpha \omega \widetilde{\omega}$ will be correctly hyphenated (since patterns $\dot{\varepsilon} \pi$ - and $x \alpha \tau-\alpha \iota$ are included in the list) but not an eventual $\alpha \alpha \tau-\varepsilon \pi-\alpha \iota \omega \widetilde{\omega}$, unless of course the user adds a new pattern $x \alpha \tau-\varepsilon \pi$ to the list in section 5 .

Another advantage of this method is the fact that, contrary to most pattern lists, such a list is easily comprehensible, and hence can be completed easily by the final user himself (who does not have to be a $T_{E X}$-guru). This comes from the fact that except for the fundamental patterns explained in the previous section - all patterns are beginnings of
words. By checking in the list, one can instantly verify why a specific word is hyphenated in a particular way; once this is understood, one can add the necessary pattern(s) to remedy to the situation. This is highly inadvisable for a pattern file created by a "pattern generator", where a simple change can have very strange and obscure results (until now pattern files always started with the most categorical phrase [NOT TD BE CHANGED IN ANY WAY!]).

To facilitate even more the comprehension of this list of patterns, the author has chosen to present it in a very special format. Here is a sample excerpt of the pattern list which the reader can find in next section:

```
\alphaủ\tauó-\sigma\sigma(u\tauOg), \alphaü\tauo-\sigma\sigma(ú\tauou)
\alpha}\varphi-,\dot{\alpha}\varphi
    - \ddot{\alpha}-\varphi\alpha\lambda(O\varsigma), \dot{\alpha}-\varphi\dot{\alpha}\lambda(OU)
        -\alpha \alpha\varphi-\alpha}\lambda\lambda(q\mu\alphal
    -\alpha< <\varphi\alpha\nuv(\varepsilon\alpha\alpha),\alpha-\varphi\alphav(\eta
        -\dot{\alpha}\varphi-\alpha\nu\delta(\alpha}\nu\omega
```

 tute one entry. In both cases, the patterns themselves are given in straight characters: $\alpha u ̋ t o ́-\sigma \sigma$ and $\alpha u ̋ \tau o-\sigma \sigma$. The slanted endings between parentheses are just possible examples, which justify the existence of these patterns. It is important that the reader realizes that these examples are not unique but just indicative. So only what is written in straight letters will appear as a pattern.

The entry $\ddot{\alpha} \varphi-, \dot{\alpha} \varphi$ - is called a rule. Because of its frequency, the author has preferred not to give any example, and to present it "as a general rule". The symbol introduces exceptions, and exceptions to exceptions. The difference is shown by indentation. In this case, $\dot{\alpha}-\varphi \dot{\alpha} \lambda$ is an exception to $\dot{\alpha} \varphi$-, and $\dot{\alpha} \varphi \rho \dot{\alpha} \lambda 00$ (genitive case of $\not \partial \varphi \rho \lambda \lambda \sigma$ ) is an example of a word starting with this cluster. $\alpha \varphi-\alpha \lambda \lambda$ is an exception to $\dot{\alpha}-\varphi \dot{\alpha} \lambda$, and $\dot{\alpha} \varphi \dot{\alpha} \lambda \lambda o \mu \alpha i$ a possible example. Same thing for $\dot{\alpha} \varphi-, \dot{\alpha}_{\alpha} \varphi \dot{\alpha} \nu, \dot{\alpha} \varphi-\alpha \nu \delta$.

Let's take a look to the concrete realization of these patterns: since $\dot{\alpha} \varphi$ - is an exception to the fundamental hyphenation rules, the pattern can for example be.$\alpha 2 \varphi 1$; the exception $\dot{\alpha}-\varphi \dot{\alpha} \lambda$ could be expressed as "if $\dot{\alpha} \varphi$ is followed by $\dot{\alpha} \lambda$, do not cut between $\varphi$ and $\dot{\alpha}$, but do cut between $\dot{\alpha}$ and $\varphi$ ". This leads us to the pattern . $\dot{\alpha} 3 \varphi 2 \alpha \dot{\alpha}$. The reader can verify that the further exception $\dot{\alpha} \varphi-\alpha \lambda \lambda$ requires a pattern like.$\dot{\alpha} 4 \varphi 3 \dot{\alpha} \lambda \lambda$.

In the next section, the complete list of patterns extracted from [Bai] is presented, in the format explained above.

## 5 Patterns for ancient Greek compound words

```
\dot{\alpha}\gamma\alpha\pi-\dot{\prime}v(\omega\rho),\dot{\alpha}\gamma\alpha\pi-\mp@subsup{r}{1}{}v(\delta\rho\omega\nu)
```



```
\alphaव\gamma\rho-u(\piv\circ\varsigma),\dot{\alpha}\gamma\rho-\dot{\}(\pivou)
\alpha}\gamma\chi-\dot{\omega}(\mu\alpha\lambda\circ\varsigma),\dot{\alpha}\gamma\chi-\omega(\mu\dot{\alpha}\lambdaOU
\alpha}\gamma\omegav-\alpha<\alpha(\rho\chi\eta\varsigma),\dot{\alpha}\gamma\omegav-\alpha(\rho\chi\widetilde{\omega\nu}
\alphai\chi\chi\mu-\alpha}\lambda(\omega\tau\sigma\varsigma),\alphai\chi\mu\mu-\alpha\lambda(\omega\tau\sigmaOU
\alpha<\rho-\omega\nu(\nu\chiO\varsigma),\alpha<\alpha-\omega\nu(ú\chiOU)
\alpha}x\rho-\omega\rho(\varepsilonl\alpha),\alpha<\alpha\rho-\omega\rho(\varepsilon|i\alpha\xi
\alpha\lambda\varepsilon\xi-\alphav(\delta\rhoO\varsigma),\alpha\lambda\varepsilon\xi-\alpha\nu(\delta\rhoOU),\alpha\lambda\varepsilon\xi-\alphav(\delta\rho\iotavò\varsigma)
\alpha}\mu-\alpha(\xi\alpha),\dot{\alpha}\mu-\dot{\alpha}(\xi\eta\zeta),\alpha<\alpha-\alpha(\xi\widetilde{\omega}
\alpha}\mu\beta\lambda-\omega(\pi\dot{\rho}\varsigma
\alpha}\mu\pi-\varepsilon\chi(\omega),\dot{\alpha}\mu\varphi-\varepsilon\xi(\omega
    -\alpha}\mu-\pi\varepsilon-\chió(\nu\eta
\alpha}\mu\pi-i(\sigma\chi\omega),\alpha<\alpha\mu\pi-l(\sigma\chi\nu\varepsilon\sigma\mu\alphai
\alpha}\mu\varphi-\alpha\gamma(\alpha\pi\alpha\zeta\omega
\alpha}\mu\varphi-\alphap(\alpha\beta\varepsiloń\omega
\alpha}\mu\varphi-\dot{\varepsilon}\pi(\omega
\alpha\mu\varphi\varepsilońр\chi(о\mu\alphal)
\alpha}\mu\varphi-\eta(x\eta\zeta),\dot{\alpha}\mu\varphi-\eta(x\widetilde{\omega}v
\alpha}\mu\varphi-<\dot{\alpha}\chi(\omega
\alpha\mu\varphi-\\zeta\alpha(\nu\omega)
\alpha\mu\varphii\sigma-\beta(\alpha:\nu\alpha),\alpha}\mu\varphi\bullet\sigma-\beta(\alpha\tau\varepsiloń\omega
\alpha}\mu\varphi-i\sigma\tau(\eta\mu\nu),\dot{\alpha}\mu\varphi-\iota\sigma\tau(\tilde{\eta}\sigma\omega
    - वू\varphi\varphi-\sigma\tauo(\muo\varsigma), a\mu\varphi\-\sigma\tauó(\muou)
\alpha \mu\varphi-ov(\delta\iota\varsigma),\alpha<\mu\varphi-оv(\delta\varepsilon\omega\zeta)
\alpha}\mu\varphi-\omega\tau(O\varsigma),\dot{\alpha}\mu\varphi-\omega\tau\tau(OU),\alpha \alpha \varphi\varphi-\omega\tau(l\zeta
\alpha}\alpha\nu-\alpha\gamma\nuO(\varsigma),\alpha\nu-\alpha\gamma\nu\varepsilon,\dot{\alpha}\nu-\alpha<\gamma\nuO(\nu),\dot{\alpha}v-\alphá\alpha\nu\nu
z\alpha\nu-\alpha\gammaO(\rho\varepsilonv́\omega)
\alpha}\nu-\alpha<\alpha\omega,\alpha\dot{\alpha}\nu-\alpha\gamma\omega(\gamma\iotaov),\alphaं\nu-\alpha\gamma\omega(\gamma\dot{\eta}
\alpha}\nu-\alpha\dot{\alpha}\varepsilon\lambda(\varphiO\varsigma),\dot{\alpha}\nu-\alpha\delta\Sigma\lambda(\varphiOU
\alpha\nu-\alpha\varepsiloni(\rho\omega)
\alpha}\nu-\alpha0\rho\hat{c}(\omega
    - \dot{\alpha}\nu\alpha-0p\epsiloń\psi(\omega)
\alpha\nu
\alpha}v-\dot{\alpha}\alpha\alpha\alphav(0os),\dot{\alpha}v-\alphax\dot{\alpha}v(0OU),\dot{\alpha}v-\alphax\alphav(0ivou)
\alpha}v-\alphax\varepsilońo(\mu\alphal),\dot{\alpha}v-\alphax\varepsilon\varepsilon(\sigma\alphal
\alpha\nu-\alpha<o(\tilde{u}\mu\alphal)
\alpha}v-\alphax\omega\chi(\grave{\eta}
\alpha}\alpha-\alpha\lambda\alpha\lambda(\alpha)\zeta\omega
\alpha\nu-\alpha<\lambda\gamma(\eta\tauO\varrho),\alpha\nu-\alpha\lambda\gamma(\eta}\zeta
\alpha}\alpha-\alpha\lambda\dot{\eta}0(\eta\zeta),\alpha\nu-\alpha\lambda\tilde{\eta}0(\varepsilon\varsigma
\alpha}\nu-\alpha\lambdai(\sigmax\omega
\alpha}\nu-\alpha\lambdax(l\varsigma),\alpha<\nu-\alpha<\alphax(i\deltaO\varsigma),\dot{\alpha}\nu-\alpha\lambda\lambdax(\varepsiloni\alpha
\alpha}\nu-\alpha\lambda\lambda(oi\omega\tauo\varsigma
\alpha}\nu-\alpha\lambda\mu(O\varsigma),\dot{\alpha}v-\alphá\alpha\lambda\mu(OU
\alpha\nu-\alpha\lambdao(\omega)
    -\alpha \alphav\alpha-\lambdaó\gamma ( }\omega\varsigma
\alpha}\nu-\alpha\lambda\tau(O\varsigma),\dot{\alpha}\nu-\dot{\alpha}\lambda\tau(OU),\dot{\alpha}\nu-\alpha\lambda\tau(\varepsiloń\varepsilon\tau\varepsilon\rhoO\varsigma
\alpha}\nu-\alpha<\alpha\omega(\tauO\varsigma),\dot{\alpha}\nu-\alpha\lambda\omega(\tauou
\alpha\nu-\alpha\mu\alphá\xi(\varepsilon\cup\tauO\varsigma),\alpha\nu-\alpha\mu\alpha\xi(\varepsilonú\tauOU)
\alpha\nu-\alpha\mu\dot{\alpha}\rho(\tau\eta\tauo\varsigma),\alpha\nu-\alpha\mu\alphap(\tau\etá\tau\sigmaU)
\alpha}v-\alphá\alpha\mu\beta(\alpha\tauO\varsigma),\dot{\alpha}v-\alpha\mu\beta(\alpha,\alpha\sigmaO
\alpha\nu-\alpha\mu\varphi(i\lambdaо\gammaOs)
\alphav-\alphav\delta(\rhoO\varsigma),\alpha}\alphav-\alphav\delta(\rhoOv),\alpha\nu-\alphav\delta(\rhoi\alpha
\alpha}\nu-\alphav\tau(ipp\eta\tauO\zeta
\alpha\nu-\alpha\nu\tau(\alpha),\alpha\nu-\alpha\nu\alphat(\eta\zeta)
```


$\dot{\alpha} \nu-\alpha \pi \lambda o ́(\omega)$
$\alpha_{\alpha} \nu-\alpha \pi 0 \delta \varepsilon\left(i x \tau \omega_{5}\right)$
$\dot{\alpha} \nu-\alpha \pi o ́ \delta \rho \rho(\alpha \sigma \tau \sigma \varsigma), \dot{\alpha} \nu-\alpha \pi o \delta \rho(\dot{\alpha} \sigma \tau \sigma v)$
$\alpha \nu-\alpha \pi \sigma 1(\nu O \varsigma), \dot{\alpha} \nu-\alpha \pi o i(\nu O U)$
$\dot{\alpha} \nu-\alpha \pi 0 \dot{\lambda} \alpha(\cup \sigma \tau 0 \varsigma), \dot{\alpha} \nu-\alpha \pi 0 \lambda \alpha(\dot{\alpha} \sigma \tau O \nu)$
$\dot{\alpha} \nu-\alpha \pi o ́ \sigma(\tau \alpha \tau \circ \varsigma), \dot{\alpha} \nu-\alpha \pi \circ \sigma(\tau \dot{\tau} \tau \circ \cup)$
$\dot{\alpha} \nu-\alpha \dot{\alpha} \pi \tau(\omega), \alpha \nu-\alpha \dot{\alpha} \psi(\omega)$
$\dot{\alpha} \nu-\alpha \rho(\theta \rho o s), \dot{\alpha} \nu-\alpha p(\theta \rho o u), \dot{\alpha} v-\alpha \rho(i \theta \mu \eta \tau o s)$
$\alpha \dot{\alpha}-\alpha \sigma \alpha \eta_{1}(\tau O 5), \alpha \nu-\alpha \sigma x \eta($ tou $)$


- $\alpha \vee \alpha-\tau 0 \lambda(\dot{\eta})$

- ${ }^{2}$-vaus
$\dot{\alpha} \nu-\alpha \varphi p o ́ \delta($ (IOऽ $), \dot{\alpha} \nu-\alpha \varphi p \circ \delta($ tгOU $)$
$\dot{\alpha} \nu \delta \rho-\alpha \dot{\alpha} \gamma(\rho L \alpha), \dot{\alpha} \nu \delta \rho-\alpha \gamma(\alpha \theta \varepsilon \epsilon \omega)$
$\dot{\alpha} \nu \delta \rho-\alpha \chi(\theta \dot{\eta} 5)$

$\dot{\alpha} \nu \delta \rho-\eta \lambda(\alpha \hat{\alpha} \tau \eta \zeta)$
$\alpha \ddot{\alpha} \nu-\varepsilon, \dot{\alpha} \nu-\varepsilon \dot{\varepsilon}, \alpha \dot{\alpha} \nu-\varepsilon$
- ${ }^{\alpha}-\nu \varepsilon \cup$

- $\dot{\alpha}-\mathrm{ve} \psi(\dot{\alpha})$
$\dot{\alpha} \nu-\eta, \dot{\alpha} \nu-\dot{\eta}, \dot{\alpha} \nu-\tilde{n}, \dot{\alpha} \nu-\eta$
- $\alpha-\nu \dot{m p}, \dot{\alpha}-\nu n ̀ p$
$\alpha \nu \theta-$
- ${ }^{2} \nu-\theta(\eta \sigma \circ \varsigma)$
- $\alpha \nu-\theta \varepsilon \mu(o v), \dot{\alpha} \nu-\theta \varepsilon \dot{\beta} \mu(l o v), \not \partial \nu-\theta \varepsilon \mu(i \zeta o \mu \alpha L)$
- $\dot{\alpha} v-\theta \varepsilon \varepsilon \omega, \dot{\alpha} \nu-\theta \dot{\varepsilon} \varepsilon(\tau \varsigma), \alpha \nu-\theta \varepsilon \circ(\mu \varepsilon v)$

- $\dot{\alpha} \nu-\theta \dot{\eta} \sigma(\varepsilon \omega \varsigma), \dot{\alpha} \nu-\theta n p(\dot{o} \varsigma)$
- $\alpha \nu-\theta i(\zeta \omega), \alpha \nu-\theta c(\nu o ̀ \zeta)$

- $\alpha \nu \theta-o \mu(o \lambda o \gamma o \tilde{\mu} \mu \alpha l)$
- $\alpha^{2} \nu \theta-o \pi(\lambda i \zeta \omega)$
- $\alpha \nu \theta-o p(\mu \varepsilon ́ \omega)$
- $2 v \theta-o \sigma(\mu i \alpha)$
- $\alpha \nu-\theta p(\alpha \approx \varepsilon \dot{\nu})$

- $\dot{\alpha}$-vixn $(\tau \circ \varsigma), \dot{\alpha}-v x \dot{n}(\tau O u)$
- $\dot{\alpha}-\nu \iota \pi t o ́(\pi 0 \cup \varsigma)$
- $\ddot{\alpha}^{-v i \tau}(\tau \circ \varsigma), \dot{\alpha}-v i \pi \tau o(u), \dot{\alpha}-v i \pi \tau \omega(\nu)$
$\dot{\alpha} \nu-o, \dot{\alpha} v-\sigma$, $\dot{\alpha} v-o$
$\alpha$-vón(ros), $\alpha$-voń( TOU)
- $\ddot{\alpha}-\nu о \mu o(\varsigma), \dot{\alpha}-\nu o ́ \mu o(\nu \varsigma), \dot{\alpha}-\nu o ́ \mu \omega(\nu)$
- $\alpha^{\alpha}$-voo( $\varsigma$ ), $\alpha$-vóo(u)
- ${ }_{\alpha}^{\alpha}$ - $\mathrm{vo} \mathrm{\sigma}(o \varsigma),{ }_{\alpha}^{\alpha}$-vóo(ov)
- $\alpha \mathrm{\alpha} v$-óol $(o \varsigma), \dot{\alpha} v-o \sigma i(o u)$
- $\alpha-v o v \theta(\tilde{\varepsilon} \tau \eta \tau \circ \varsigma)$
$\dot{\alpha} \nu \tau-\dot{\alpha}, \dot{\alpha} \nu \tau-\alpha$

- $\alpha v-\operatorname{cec}(\omega)$
- $\dot{\alpha} \nu-\tau \dot{\varepsilon} \lambda \lambda(\omega)$
$\dot{\alpha} \nu \tau-\dot{n}, \dot{\alpha} \nu \tau-\eta$
$\dot{\alpha} \nu \tau-\iota \sigma o ́(\omega)$
$\dot{\alpha} \nu \tau-\tau \sigma \chi$ (upl $\zeta о \mu \alpha t)$
$\dot{\alpha} \nu \nu \tau-\alpha, \dot{\alpha} \nu \tau-\cup, \dot{\alpha} \nu \tau-\omega$
$\alpha ้ \nu-v, \dot{\alpha} v-u, \alpha \dot{\alpha} \nu-v$
- $\ddot{\alpha}-v \nu \mu \varphi(o \varsigma), \dot{\alpha}-v \rho^{\prime} \mu \varphi(\varepsilon \cup \tau \sigma \varsigma), \dot{\alpha}-v \Delta \mu \varphi(\varepsilon v \tau \tau \sigma)$


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\alpha\nu-\omega,\dot{\alpha}\nu-\omega
    - \alphav\omega-\varphi\varepsilonp(ìs)
\alpha}\pi-\dot{\alpha},\dot{\alpha}\pi-
    - \dot{\alpha}-\pi\alpha\gamma\etá\eta}(\varsigma),\dot{\alpha}-\pi\alpha\gamma\dot{\eta}(\varsigma),\dot{\alpha}-\pi\alpha\gammaO(\tilde{v}),\dot{\alpha}-\pi\alpha\gamma\tilde{\omega}(v
```



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    - \dot{\alpha}-\pi\dot{\alpha}0(\varepsilon\iota\alpha),\dot{\alpha}-\pi\alpha0(\varepsiloni\alpha\varsigma)
        - &\pi-\alpha0\alpha(v\alpha\pii\zeta\omega)
    - \dot{\alpha}-\pi\dot{\alpha}\lambda\alpha(\mu\nu\sigma\varsigma),\dot{\alpha}-\pi\alpha\lambda\dot{\alpha}(\mu\nuOU)
    -\alpha}-\pi\dot{\alpha}\rho(0\varepsilonvOs),\dot{\alpha}-\pi\alpha\rho(0\varepsilońvOU
            -\alpha\dot{\alpha}\pi-\alphapi(0\mu\eta\tauo\varsigma),\alpha}\alpha\pi-\alpha\rho! (0\mu\varepsiloń\omega
            -\alpha}\pi-\alphapx(\varepsiloń\omega
            -\alpha \alpha\pi-\alphapv(\varepsilońo\mu\alphat)
            -\alpha}\pi-\alphap\tau(\alpha\dot{\alpha}\omega
            -\alpha \alpha\pi-\alphapú(\tau\omega)
            -\alpha\alpha}\pi-\alpháp\chi(\omega
    - \dot{\alpha-\pi\alphá\alpha\omega(\rho), \dot{\alpha}-\pi\dot{\alpha}\tauo(\rhoO\varsigma)}
\alpha}\pi-\hat{\varepsilon}\delta\hat{\delta}(\mu\alpha\iota),\dot{\alpha}\pi-\varepsilon\delta\deltaó(\mu\varepsilon0\alpha),\alpha\dot{\alpha}\pi-\varepsilon\delta\delta\varepsilon(\imath\sigma0\varepsilon
\alpha}\pi-\varepsilon0i(\zeta\omega
\alpha}\pi-\varepsilonlx(\alpha<\zeta\omega
\alpha}\pi-\varepsiloni\lambda(\eta\mu\alpha),\dot{\alpha}\pi-\varepsiloni\lambda(\tilde{\varepsilon}\omega
"\pi-\varepsilon!
    - %-\pistp(os)
\alpha}\pi-\varepsiloni\pi(o\mu\varepsilonv),\alpha\pi-\varepsiloni( \piOV
\alpha}\pi-\varepsiloni\rho\gamma(\omega),\dot{\alpha}\pi-\varepsilon\iota\rho\gamma(\dot{\alpha}0\omega
\alpha}\pi-\varepsilon\dot{\varepsilon}(\deltauvOv),\dot{\alpha}\pi-\varepsilon\chi(\delta\Deltáv\omega
\alpha}\pi-\varepsilon\hat{\varepsilon}(\alphaUVO\nu),\alpha\dot{\alpha}\pi-\varepsilon\lambda(\alphaưv\omega
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\alpha}\pi-\hat{\varepsilon}\mu(\varepsilon\sigma\sigma\alpha),\alpha\pi-\varepsilon\mu(\varepsiloń\omega
\alpha}\pi-\hat{\varepsilon}v(\varepsilon\piO\nu),\dot{\alpha}\pi-\varepsilonv(\dot{\varepsilon}\pi\omega
    -\alpha<\alpha}-\pi\hat{\varepsilon}\nu0(\eta\tau0\varsigma),\dot{\alpha}-\pi\varepsilonv0(\dot{\eta}\varsigma
\alpha}\pi\mathrm{ -ह́o(ix 人)
\alpha}\pi-\varepsilon;\rho\alpha\sigma(\iota\varsigma),\dot{\alpha}\pi-\varepsilon\rho\alphá\alpha\sigma(\varepsilon\omega\zeta
\alpha}\pi-\varepsilon\rho\gamma(\omega),\dot{\alpha}\pi-\varepsilonр\gamma(\dot{\alpha}\zetaо\mu\alpha!
\alpha}\pi-\hat{\varepsilon}\rho\delta(\omega
&\pi\varepsilon\rho-\varepsiloni, &}<\pi\varepsilon\rho-\varepsilon
\alpha}\pi-\varepsilonp\varepsilon(i\delta\omega
\alpha}\pi-\varepsilon\rho\dot{\prime}(\chi\omega),\alpha<\pi-\varepsilon\rhou(0\rho\dot{\alpha}\omega
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\alpha}\pi-\varepsilon\rho\omega(\tauо\varsigma),\dot{\alpha}\pi-\varepsilon\rho\omega(\tauOU),\dot{\alpha}\pi-\varepsilon\rho\omega(\varepsilon\omega
\alpha}\pi-\varepsilon\sigma0(\varepsiloń\sigma\mu\alphal
\alpha}\pi-\varepsilon\nu0\dot{u}(\nu\omega
\alpha}\pi\pi-\varepsilon\nu\nu(\dot{\alpha}\zeta\omega
\alpha}\pi-\varepsilon\dot{\varepsilon}\chi(o\mu\alpha\iota),\dot{\alpha}\pi-\varepsilonu\chi(ó\mu\varepsilon0\alpha
\alpha}\pi-\varepsilon\cup\omega(vi\zeta\omega
\alpha\pi-\varepsilon\varphi(0O\varsigma), \dot{\alpha}\pi-\varepsiloń\varphi(0Ou),\dot{\alpha}\pi-\varepsilon\varphi(0\varepsiloń\sigma\tau\varepsilon\rho\circ\varsigma)
\alpha}\pi-\hat{\varepsilon}\chi(00\mu\alphat),\alpha<<-\varepsilon\chi(0\alphai\rho\omega
\alpha}\pi-\dot{\eta}\gamma(\gamma\varepsilon\lambdaov
\alpha}\pi-\eta\lambda(\varepsilon\gamma\varepsilon'\omega\varsigma
\alpha}\pi-\eta\dot{\eta}\omega(\rhoO\varsigma),\dot{\alpha}\pi-\eta\omega(\rhoOU
\alpha}\alpha\pi-<\alphá\alpha(\lambda\lambda\omega
幺\pi-i\pi(\pi\delta\omega)
\alpha}\pi-\iota\sigma(ó\omega
    -\alpha}-\pi\imath\sigma\tau(\tilde{\varepsilon}\omega
\alpha}\pi\mathrm{ -i竌 (nul)
\alpha}\pi-i\sigma\chi(\omega),\dot{\alpha}\pi-\imath\sigma\chi(\cuppi\zetao\mu\alpha\iota
\alpha}\pi-0<x(o\varsigma),\dot{\alpha}\pi-0ix(OU),\alpha\alpha\pi-0:x(\tilde{\varepsilon}\omega
\alpha}\pi-о\mu(\omega\zeta\zeta\omega
```



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\(\dot{\alpha} \pi\)-о \(\lambda \circ \varphi(u ́ p o \mu \alpha \iota)\)
\(\dot{\alpha} \pi\)-о \(о \dot{\rho}(\gamma \sim \mu \mu)\)
\(\alpha \pi-o v i \nu(\eta \mu i)\)
\(\dot{\alpha} \pi\)-ovט义 \((i \zeta \omega)\)
\(\dot{\alpha} \pi\)-oद̣úv( \(\omega\) )
\(\alpha \pi\)-o \(\pi \tau(o \varsigma), \alpha \pi-\alpha \dot{\alpha} \pi(o u)\)
    - \(\dot{\alpha} \pi \dot{o}-\pi \tau 0 \lambda(\iota \varsigma)\)
\(\dot{\alpha} \pi-o p, \dot{\alpha} \pi\)-óp, \(\dot{\alpha} \pi-o \rho\)
    - \(\alpha-\pi o ́ p \theta(\eta \tau \circ \varsigma), \alpha-\pi \circ \rho \theta(\eta\) ñou)
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        \(\dot{\alpha} \pi \sigma-\hat{p}\left(\rho \alpha \alpha \theta \cup \mu \varepsilon \epsilon^{\prime} \omega\right)\)
    - \(\alpha-\pi o ́ p \varphi \cup(\rho о \varsigma), \dot{\alpha}\) - \(\pi о р \varphi и(\rho о u)\)
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\(\dot{\alpha} \pi-o \cup, \dot{\alpha} \pi-o u ́, \dot{\alpha} \pi-o u\)
    - \(\ddot{\alpha}-\pi\) OU \(_{5}, \ddot{\alpha}-\pi 0 \cup\)
\(\dot{\alpha} \pi-0 \chi \varepsilon \tau(\varepsilon \dot{v} \omega)\)
ふ̀ \(\pi\)-oхup(ó \(\omega\) )
\(\ddot{\alpha} \pi\)-oфL( \(\varsigma), \dot{\alpha} \pi\)-ó \(\psi z(\omega \varsigma)\)
\(\dot{\alpha} \pi-\omega\left(\delta \varepsilon^{\prime} \omega\right)\)
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\(\alpha \rho \mu-\alpha \mu(\alpha \xi \alpha), \dot{\alpha} p \mu-\alpha \mu(\alpha \xi \eta \xi)\)
\(\dot{\alpha} p \chi-\eta \gamma \dot{\varepsilon} \tau(\eta \varsigma), \dot{\alpha} p \chi-\eta \gamma \varepsilon \tau(\widetilde{\omega} \nu)\)
\(\dot{\alpha} \rho \chi-\eta \gamma \dot{o}(\varsigma), \dot{\alpha} \rho \chi-\eta \gamma \dot{\partial}(\varsigma), \dot{\alpha} \rho \chi-r \gamma \gamma(\tilde{\nu})\)
\(\alpha \rho \rho \chi-\eta \gamma \dot{\varepsilon}, \alpha \dot{\alpha} \rho \chi-\eta \gamma \dot{\varepsilon},{ }_{\alpha}^{\alpha} \rho \chi-\eta \gamma \bar{\omega}(v)\)
\(\dot{\alpha} \rho \chi-1 \varepsilon(\rho \varepsilon \dot{\nu} \varsigma)\)
\(\dot{\alpha}-\sigma \tau \varepsilon \rho \gamma-\alpha \nu(\omega \rho), \dot{\alpha}-\sigma \tau \varepsilon \rho \gamma-\alpha \nu(o \rho \omega \nu)\)
\(\alpha \dot{U}-\)
    - \(\alpha \dot{v} \theta_{1-}^{\left.-(\gamma \varepsilon v \eta)_{s}\right)}\)
\(\alpha u ̈ \tau-, \alpha u ̋ \tau-\)
    - xuti-x \(\alpha\)
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        - \(\alpha u \tau \tau-\delta \pi \tau(\eta \zeta)\)
        - aủt-ópo(pos), au̇t-opó(pou)
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\({ }_{\alpha}^{\alpha} \varphi-{ }^{\alpha} \dot{\alpha} \varphi\) -
    - \(\ddot{\alpha}-\varphi \alpha \lambda(o s), \dot{\alpha}-\varphi \dot{\alpha} \lambda(o u)\)
        - \(\alpha \varphi-\alpha \lambda \lambda(o \mu \alpha l)\)
    - \(\dot{\alpha}-\phi \alpha v(\varepsilon l \alpha), \alpha, \varphi \alpha v(\dot{r} \varsigma)\)
        - \(\dot{\alpha} \varphi-\alpha \nu \delta(\alpha \nu \omega)\)
    - \(\hat{\alpha}^{\alpha}-\varphi \alpha \rho, \dot{\alpha}-\phi \dot{\alpha} \rho(\mu \alpha x \tau \circ \varsigma), \dot{\alpha}-\varphi \alpha \rho(\mu \dot{\alpha} x \tau \circ u)\)
        - \(\dot{\alpha} \varphi-\alpha \rho \pi(\dot{\alpha} \zeta \omega)\)
    - \(\alpha-\varphi \alpha \tau(0 \varsigma), \alpha-\varphi \alpha \tau(o u)\)
    - \(\ddot{\alpha}-\varphi z(\rho \tau \circ \varsigma), \dot{\alpha}-\varphi \varepsilon(\rho \tau o u), \dot{\alpha}-\varphi \varepsilon\left(\gamma \gamma \eta_{\varsigma}\right)\)
        - \(\alpha \varphi-\varepsilon i(\rho \gamma \omega)\)
        - \(\dot{\alpha} \varphi-\dot{\varepsilon} \lambda(x \omega)\)
    - \(\dot{\alpha}-\varphi \theta(\) ( \(\tau \circ \varsigma), ~ \dot{\alpha}-\varphi \theta(i \tau O U)\)
    - \(\alpha-\varphi i \lambda(\omega \varsigma), \alpha-\varphi L \lambda(o ́ x \alpha \lambda o \varsigma)\)
    - \(\ddot{\alpha}-\varphi \lambda(o \omega \varsigma), \alpha \ddot{\alpha}-\varphi \lambda(\dot{\varepsilon} \gamma \mu \alpha \nu \tau \circ \varsigma)\)
    - \(\alpha-\varphi \circ \beta(\circ \varsigma), \alpha-\varphi o ́ \beta(\eta \tau \sigma \varsigma), \dot{\alpha}-\varphi о \beta(\eta \dot{\eta} \tau \circ \cup)\)
    - \(\dot{\alpha}-\varphi \circ \rho(\eta \tau \circ \varsigma), \dot{\alpha}-\varphi \circ \rho\left(\eta \eta_{\tau O U}\right)\)
    - \(\ddot{\alpha}-\varphi о \rho о(\varsigma), \dot{\alpha}-\varphi \dot{\alpha} \rho \circ(u), \dot{\alpha}-\varphi o ́ \rho \omega(\nu)\)
    - \(\alpha^{\alpha}-\varphi p(\) (oupos),\(\dot{\alpha}-\varphi p(\alpha, \alpha \mu \omega \nu)\)
    - \({ }_{\alpha}^{\alpha}-\varphi \cup(x \tau \circ \varsigma), \alpha-\varphi \dot{\alpha}(\lambda \alpha x \tau \circ \varsigma), \dot{\alpha}-\varphi \cup\left(\grave{\eta}_{\varsigma}\right)\)
        - \(\dot{\alpha} \varphi-\Delta \beta(p i \zeta \omega)\)
        - \(\dot{\alpha} \varphi-\nu \pi(\nu i \zeta \omega)\)
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\(\beta \alpha \lambda \alpha \nu-\alpha(\gamma \rho \alpha), \beta \alpha \lambda \alpha \nu-\alpha(\gamma \rho \widetilde{\omega} \nu)\)
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\(\beta \alpha \lambda \lambda-\alpha(\chi p \alpha ́ \delta \alpha l)\)
\(\beta \eta \tau-\alpha \dot{( }(\rho \mu \omega \nu), \beta \eta \tau-\alpha(\rho \mu \omega \nu \omega \nu)\)
\(\beta \lambda, \sigma \cup p-\omega(\pi i \delta o \varsigma), \beta \lambda, \sigma \cup p-\widetilde{\omega}(\pi l \varsigma), \beta \lambda o \sigma \cup p-\omega(\pi i \delta \omega v)\)
ßоเ \(\omega \tau-\alpha(\rho \chi \eta \zeta)\), \(\beta\) оぃ \(\omega \tau-\alpha\left(\rho \chi^{i \alpha}\right)\)
ßó \(\sigma-\pi(о р о \varsigma), \beta \circ \sigma-\pi(\) о́pou)
ß०ừ- \(\alpha(\rho \chi \circ \varsigma), \beta \circ \cup \lambda-\alpha ́(\rho \chi O \cup)\)
\(\gamma \alpha \mu \psi\)-( \(\widetilde{\omega} \cup \xi)\)
\(\gamma \varepsilon \rho о \nu \tau-\alpha \gamma(\omega \gamma \varepsilon \omega)\)
\(\gamma \downarrow \gamma \alpha \nu \tau-0 \lambda(\varepsilon \tau \tau \zeta)\)
\(\gamma^{\lambda} \alpha \cup \cup x-\omega \pi(\iota \delta o \varsigma), \gamma \lambda \alpha u x-\widetilde{\omega} \pi(\iota \varsigma), \gamma \lambda \alpha u x-\omega \pi(\grave{\varsigma})\)
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\(\gamma \quad \nu \cup x \alpha \lambda \cup \sigma-\alpha ́(\gamma p \cup \pi \nu \alpha)\)
\(\gamma \circ \rho \gamma-\omega(\pi i \delta o \varsigma), \gamma\) ор \(\gamma-\bar{\omega}(\pi t \varsigma), \gamma\) ор \(\gamma-\omega(\pi \dot{o} \varsigma)\)
\(\delta \varepsilon \iota \sigma-\eta(\nu \omega \rho), \delta \varepsilon \varepsilon \sigma-\eta_{1}(v o ́ p \omega v)\)
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\(\delta \varepsilon \chi-\eta_{1}^{\prime}(\mu \varepsilon \rho \circ \varsigma), \delta \varepsilon \chi-\eta_{1}\left(\mu \varepsilon \rho_{\rho} \sim u\right)\)
\(\delta \eta \mu-\alpha \gamma(\omega \gamma \dot{\varrho} \varsigma)\)
\(\delta \dot{\eta} \mu-\alpha \rho(\chi \circ \varsigma), \delta \eta \mu-\alpha p(\chi \circ u), \delta \eta \mu-\alpha p(\chi \div x o s)\)
\(\delta \eta \mu-\omega \varphi\left(\varepsilon \lambda \grave{\eta}_{\varsigma}\right)\)
\(\delta 1 \sigma-\theta\left(\alpha \sim \dot{\eta}_{\varsigma}\right)\)
\(\delta เ \sigma \sigma-\dot{\alpha}(\rho \chi \alpha t), \delta เ \sigma \sigma-\alpha(\rho \chi \bar{\omega} \nu)\)
\(\delta \iota \sigma-\cup \pi \pi(\alpha \tau \circ \varsigma), \delta \iota \sigma-u \pi(\dot{\alpha} \circ \circ u)\)
\(\delta 1 \sigma-\chi(i \lambda 10 l)\)
סovp- \(\left(\nu \varepsilon x \grave{\eta}_{\varsigma}\right)\)
ठúб-, \(\delta \cup \sigma-\)
    - \(\delta \dot{u}-\sigma l \varsigma, \delta \dot{u}-\sigma \varepsilon(\omega \varsigma), \delta \dot{u}-\sigma \omega\)
\(\delta \omega \delta \varepsilon \in \alpha \dot{\alpha} \delta-\alpha \rho(\chi \circ \varsigma), \delta \omega \delta \delta \chi \alpha \delta \delta-\alpha \rho(\chi \circ u)\)
\(\delta \omega \delta \delta \dot{\varepsilon} x-\alpha \rho(\chi \circ \varsigma), \delta \omega \delta \varepsilon x-\alpha \rho(\chi \circ \cup), \delta \omega \delta \varepsilon \chi-\varepsilon,(\tau \eta \varsigma)\)
عixóб-o( \(\rho \circ \varsigma)\), हixoл-ó( \(\rho \circ \cup)\)
\(\varepsilon \varepsilon_{i \lambda-\alpha}^{\alpha}\left(\chi \eta_{s}\right), \varepsilon \dot{i} \lambda-\alpha_{p}(\chi \bar{\omega} \nu)\)
عî \(\sigma-\), हí
    - \(\varepsilon\) il- \(\sigma \omega\)
\(\varepsilon \bar{\varepsilon}-\varepsilon \chi\left(\varepsilon, p_{i}(\alpha)\right.\)
\(\dot{\varepsilon} \lambda i x-\omega(\psi), \varepsilon \lambda \lambda l x-\omega(\pi i \delta O \varsigma), \varepsilon \bar{\varepsilon} l x-\widetilde{\omega}(\pi \iota \varsigma), \varepsilon \lambda_{\lambda} L x-\omega(\pi i \delta \omega)\)
\(\varepsilon \nu-\), \(\varepsilon^{\nu}-\)
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    - \(\dot{\varepsilon} \nu \tau \alpha \tilde{v} \theta(\alpha), \varepsilon \bar{v} \tau \alpha v \theta(o i)\)
\(\dot{\boldsymbol{\varepsilon}} \xi-\)
\(\dot{\varepsilon} \pi-\), \(\dot{\varepsilon} \pi-\)
    - \(\ddot{\varepsilon}-\pi \alpha \theta o(\nu), \underline{\varepsilon}-\pi \alpha \theta \alpha(\varsigma), \frac{\varepsilon}{\varepsilon}-\pi \alpha \theta \varepsilon(\varsigma)\)
    - \(\dot{\varepsilon}-\pi \dot{\alpha} \theta \circ(\mu \varepsilon \nu), \dot{\varepsilon}) \pi \dot{\alpha} \theta \alpha(\tau \varepsilon)\)
    - \(\mathfrak{E} \pi t-\), ह́ \(\pi i-\), \(̇ \pi t-\)
        - \(\varepsilon \pi-c \dot{\alpha} \lambda \lambda(\omega)\)
        - \(\varepsilon \pi-\alpha \alpha u ́(\omega)\)
        - \(\grave{\varepsilon} \pi-\alpha_{\alpha} \chi(\omega)\)
        - \(\varepsilon \pi-i \eta(\mu)\)
        - \(\varepsilon \pi-\mathrm{i} \theta \dot{\cup}(\omega)\)
        - \(\varepsilon \pi-i \lambda \lambda(i \zeta \omega)\)
        - \(\dot{\varepsilon} \pi-i \sigma \tau \alpha \mu(\alpha t), \dot{\varepsilon} \pi-i \sigma \tau \alpha \sigma(\alpha t), \bar{\varepsilon} \pi-i \sigma \tau \alpha \tau(\alpha t)\)
        - \(\bar{\varepsilon} \pi-\iota \sigma \tau \alpha ́ \mu(\varepsilon \theta \alpha)\), दे \(\pi-i \sigma \tau \alpha \nu(\tau \alpha l)\)
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        - \(\dot{\varepsilon} \pi-\omega \boldsymbol{-} \omega(\grave{\eta})\)
\(\varepsilon\) غ \(\rho \mu-\alpha \varphi\) ( \(\rho \circ ́ \delta \iota \tau \circ \varsigma)\)
\(\varepsilon_{\rho}^{\rho}-\rho \alpha \dot{\alpha} \pi(\tau \omega)\)
èp-puӨ ( \(\mu \circ \varsigma), ~ \varepsilon ̀ \rho-p u ́ \theta(\mu O u)\)
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દ \(\sigma\) -
\(\dot{\varepsilon} \tau \varepsilon \rho-\alpha(\lambda x \grave{\eta} \varsigma)\)
\(\dot{\varepsilon} \tau \varepsilon \rho-\eta_{1}^{( }(\mu \varepsilon \rho \circ \varsigma)\)
```



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\(\chi \alpha \tau-\dot{\alpha} \pi \tau 0 \mu(\alpha i)\)
\(x \alpha \tau-\alpha p, x \alpha \tau-\alpha p\)
    - xata-plү( \(\eta \lambda\) д̀s)
    - x \(\alpha \tau \alpha ́-\rho p, x \alpha \tau \alpha-\rho p\)
\(x \alpha \tau-\alpha \sigma \beta(\varepsilon ́ v \nu \cup \mu)\)
\(\chi \alpha \tau-\alpha \sigma \theta(\mu \alpha i \nu \omega)\)
\(x \alpha \tau-\alpha \sigma x \dot{\varepsilon}(\omega), x \alpha \tau-\alpha \sigma x \bar{\omega}, x \alpha \tau-\alpha \sigma x \varepsilon i(\varsigma), x \alpha \tau-\alpha \sigma x o(\tilde{v} \nu)\)
\(x \alpha \tau-\alpha \sigma \pi \alpha ́ \zeta(o \mu \alpha!)\)
\(\chi \alpha \tau-\alpha \sigma \tau \varepsilon p(i \zeta \omega)\)
\(x \alpha \tau-\alpha u\)
\(\chi \alpha \tau-\varepsilon \gamma \gamma(\nu \alpha ́ \omega)\)
\(x \alpha \tau-\varepsilon \delta(\omega)\)
    - \(x \alpha \tau \varepsilon ́-\delta \rho(\alpha \theta \circ \vee)\)
\(x \alpha \tau-\varepsilon i(\beta \omega), x \alpha \tau-\varepsilon ı(x \alpha ́ \zeta \omega)\)
\(x \alpha \tau-\varepsilon i \overline{( }(\pi \alpha)\)
    - \(x \alpha-\tau \varepsilon \tilde{\delta} \delta(o \nu), x \alpha-\tau \varepsilon i v \alpha:\)
\(x \alpha \tau-\varepsilon \lambda(\alpha \dot{v} \omega)\)
\(\chi \alpha \tau-\varepsilon \mu(\dot{\varepsilon} \omega)\)
\(x \alpha \tau-\varepsilon \nu(\alpha i \rho \omega)\)
\(\chi \alpha \tau-\varepsilon \xi(\alpha v i \sigma \tau \alpha \mu \alpha t)\)
\(x \alpha \tau-\varepsilon \pi(\alpha \gamma \gamma \varepsilon \lambda \lambda о \mu \alpha l)\)
\(\chi \alpha \tau-\varepsilon p(\gamma \alpha \dot{\zeta} \rho \mu \alpha\),
\(\chi \alpha \tau-\varepsilon \sigma\left(\theta^{\prime} \omega\right)\)
\(x \alpha \tau-\varepsilon \cup(\eta \mu \varepsilon \rho \varepsilon \cup ́ \omega)\)
\(\alpha \alpha \tau-\varepsilon \varphi(\alpha \lambda \lambda o \mu \alpha t)\)
\(x \alpha \tau-\varepsilon \chi(\omega)\)
\(x \alpha \tau-\dot{n}, x \alpha \tau-\eta\)
\(x \alpha \tau-i, x \alpha \tau-1\)
\(x \alpha \dot{\alpha} \tau-0, x \alpha \tau-\dot{\sigma}, x \alpha \tau-о\)
\(x \propto \tau-\cup \dot{,}, x \alpha \tau-\cup\)
\(\chi \alpha \tau-\omega \mu(\alpha \dot{\alpha} t \circ \varsigma)\)
\(\chi \alpha \tau-\omega \chi\left(p{ }^{\prime} \alpha \omega\right)\)
\(x \alpha \chi-\varepsilon(\xi(\alpha)\)
\(x \in \nu-\alpha(\gamma \dot{\eta} \varsigma)\)
\(x \varepsilon \nu \tau \rho-\eta \nu\left(\varepsilon x \grave{\eta}_{5}\right)\)
хย́px-OU( \(\mathrm{p} O \varsigma\) )
\(x \varepsilon p-o i(\alpha \xi), x \varepsilon p-o l(\alpha \dot{\alpha} x \nu)\)
\(\chi \varepsilon \varphi \propto \lambda-\alpha \lambda(\gamma \dot{o} \varsigma)\)
\(\chi \varepsilon \varphi \alpha \lambda-\eta \gamma(\varepsilon \rho \varepsilon ́ \tau \eta \varsigma)\)
\(\chi \lambda \alpha \sigma-\alpha \cup(\chi \varepsilon \vee \varepsilon \cup ́ o \mu \alpha \iota)\)
хо \(\lambda-\omega \pi(\dot{o} \varsigma)\)
xориӨ- \(\alpha(i \xi)\), xори日- \(\alpha(i x \omega v)\)
\(\chi \cup \alpha \nu-\omega(\pi i \delta \circ \varsigma), x \cup \alpha \nu-\widetilde{\omega}(\pi i \varsigma)\)
\(x \dot{x} \lambda \lambda-\omega \psi, x \dot{\prime} x \lambda-\omega \pi(\circ \varsigma), x \cup x \lambda-\omega \pi(\omega \nu)\)
\(x \cup \nu-\alpha \lambda(\omega \pi \eta \xi)\)
\(x \cup v-o ́ \delta(o v s), x \cup v\)-oठ (óvt \(\omega v\) )
\(x \cup v-\omega \pi(\eta \varsigma), x \cup \nu-\widetilde{\omega} \pi(ᄂ \varsigma), x \cup v-\omega \pi(i \delta \omega \nu)\)
\(x \omega \lambda-\alpha\) ( \(x \rho \varepsilon ́ \tau \eta s\) )
\(x \omega \mu-\alpha \alpha_{p}\left(\chi_{\rho}\right), x \omega \mu-\alpha p\left(\chi^{i} \circ \nu\right)\)
\(x \omega \mu-\omega\left(\delta \dot{o}_{\varsigma}\right)\)
\(x \omega \mu-\eta \lambda(\alpha \tau \eta \varsigma)\)
\(x \omega \pi-\eta_{p}\left(\eta_{\varsigma}\right)\)
\(\lambda \alpha \beta p-\alpha(\gamma o ́ \rho \eta s)\)
\(\lambda \varepsilon \nu x-\alpha \nu \theta\left(\grave{\eta}_{\varsigma}\right)\)
\(\lambda \varepsilon u ́ x-\alpha \sigma(\pi!\varsigma), \lambda \varepsilon u x-\alpha ́ \sigma(\pi t \delta \sigma \varsigma), \lambda \varepsilon u x-\alpha \sigma(\pi i \delta \omega \nu)\)
\(\lambda \varepsilon \cup x-\eta \quad(\rho \varepsilon \tau \mu \circ \varsigma), \lambda \varepsilon \cup x-\eta(\rho \varepsilon \varepsilon \tau \mu \circ u)\)
\(\lambda \varepsilon \cup ́ x-\iota(\pi \pi \circ \varsigma), \lambda \varepsilon \cup x-i(\pi \pi \circ \cup)\)
\(\lambda \varepsilon \cup x-\omega(\lambda \varepsilon v \circ \varsigma), \lambda \varepsilon \cup x-\omega(\lambda \varepsilon ́ v \circ u)\)
\(\lambda \varepsilon \cup \chi-\varepsilon(\mu \circ \vee \varepsilon ์ \epsilon)\)
```

$\lambda \alpha \chi-\alpha \gamma\left(o \rho_{s}\right)$
$\lambda u x-\alpha \cup\left(\gamma \eta_{\zeta}\right)$
$\lambda u x$-ou(pia)
$\lambda \nu ́ \sigma-\alpha \nu(\delta \rho \circ \varsigma), \lambda u \sigma-\alpha v(\delta \rho \circ u)$
$\mu \alpha \times \rho-\alpha i(\omega \nu), \mu \alpha \times p-\alpha l(\omega \nu \omega \nu)$
$\mu \alpha \times \rho-\eta(\gamma \circ \rho \varepsilon ́ \omega)$
$\mu \varepsilon \gamma \gamma^{\prime} \lambda-\alpha\left(\nu \chi O_{\varsigma}\right), \mu \varepsilon \gamma \alpha \lambda-\alpha \dot{\alpha}\left(\delta t x \sigma_{5}\right), \mu \varepsilon \gamma \alpha \lambda-\alpha(\delta i x O \nu)$
$\mu \varepsilon \gamma \alpha \lambda-\eta \quad(\tau \omega \rho), \mu \varepsilon \gamma \alpha \lambda-\eta(\gamma o ́ \rho о \varsigma)$
$\mu \varepsilon \gamma \alpha \lambda-\omega(\nu \cup \mu \circ \varsigma), \mu \varepsilon \gamma \alpha \lambda-\omega(\nu \cup \mu \circ O)$
$\mu \varepsilon \gamma-\alpha v(\chi \dot{\eta} \zeta)$
$\mu \hat{E} \theta-, \mu \varepsilon \theta-$

- $\mu \dot{\varepsilon}-\theta u, \mu \varepsilon-\theta u ́(\omega), \mu \varepsilon-\theta u(\mu \nu \alpha i o s)$
- $\mu \varepsilon \theta-ט \sigma \tau(\varepsilon \rho \circ \varsigma), \mu \varepsilon \theta-v \sigma \tau(\varepsilon \rho \rho \circ u)$
$\mu \varepsilon \lambda \alpha \nu-\alpha(\imath \tau \iota \varsigma), \mu \varepsilon \lambda \alpha \nu-\alpha(i \gamma i \delta o \varsigma)$
$\mu \varepsilon \lambda \alpha \nu-\varepsilon(i \mu \omega v)$
$\mu \varepsilon \lambda \alpha \nu-\dot{\nu}(\delta \rho o s)$
$\mu \varepsilon \lambda-\varphi(\delta \dot{o} \varsigma)$
$\mu \varepsilon \sigma-\dot{\alpha} \gamma(\chi \cup \lambda o v), \mu \varepsilon \sigma-\alpha \gamma(\chi \dot{\lambda} \lambda, O)$
$\mu \dot{\varepsilon} \sigma-\alpha x(\tau \circ \varsigma), \mu \varepsilon \sigma-\alpha x(\tau O \nu)$
$\mu \varepsilon \sigma-\alpha \nu(\lambda o \varsigma), \mu \varepsilon \sigma-\alpha v ́(\lambda o u)$
$\mu \varepsilon \sigma-\varepsilon \gamma(\gamma \cup \alpha ́ \omega)$
$\mu \varepsilon \sigma-\eta \mu(\beta p i \alpha)$
$\mu \varepsilon \sigma-\bar{\eta}(\rho \eta \varsigma), \mu \varepsilon \sigma-\tilde{\eta}(\rho \varepsilon \varsigma)$
$\mu \varepsilon \sigma-i \delta(i o \varsigma), \mu \varepsilon \sigma-1 \delta(i o u)$
$\mu \varepsilon \sigma o ́-\delta \mu(\eta), \mu \varepsilon \sigma \sigma-\delta \mu(\tilde{\omega} \nu)$
$\mu \varepsilon \sigma \sigma-\alpha v(\lambda o \varsigma), \mu \varepsilon \sigma \sigma-\alpha \cup(\lambda o u)$
$\mu \varepsilon \sigma \sigma-\eta(\rho \eta \varsigma), \mu \varepsilon \sigma \sigma-\tilde{\eta}(\rho \varepsilon \varsigma)$
$\mu \varepsilon \tau-\alpha, \gamma \gamma(\varepsilon \lambda o \varsigma), \mu \varepsilon \tau-\alpha \gamma \gamma(\varepsilon \lambda o u)$
$\mu \varepsilon \tau-\alpha \gamma \omega, \mu \varepsilon \tau-\alpha \dot{\alpha} \varepsilon(\leftarrow \varsigma), \mu \varepsilon \tau-\alpha \dot{\alpha} \sigma(\mu \varepsilon \nu)$
$\mu \varepsilon \tau-\alpha i(\rho \omega), \mu \varepsilon \tau-\alpha i(\sigma \sigma \omega), \mu \varepsilon \tau-\alpha i(\tau \varepsilon \omega)$
$\mu \varepsilon \tau-\alpha \lambda \lambda \alpha(\sigma \sigma \omega)$
$\mu \varepsilon \tau-\alpha \mu \pi(\dot{\varepsilon} \chi \omega)$
$\mu \varepsilon \tau-\alpha \mu u ́(\nu \omega)$
$\mu \varepsilon \tau-\alpha \mu \varphi(\stackrel{\alpha}{\prime} \omega)$
$\mu \varepsilon \tau-\alpha \mu \omega(\nu i o s), \mu \varepsilon \tau-\alpha \mu \omega(v i o u)$
$\mu \varepsilon \tau-\alpha v i \sigma \tau(\eta \mu l)$
$\mu \varepsilon \tau-\alpha \tilde{v}(\theta \iota \varsigma), \mu \varepsilon \tau-\alpha u(\delta \dot{\alpha} \omega)$
$\mu \varepsilon ́ \tau-\varepsilon, \mu \varepsilon \tau-\varepsilon ́, \mu \varepsilon \tau-\varepsilon$
$\mu \varepsilon \tau-i(\sigma \tau \eta \mu)$
$\mu \varepsilon ́ \tau-o, \mu \varepsilon \tau-o ́, \mu \varepsilon \tau-о$
$\mu \varepsilon ́ \tau-\omega, \mu \varepsilon \tau-\omega, \mu \varepsilon \tau-\omega$
$\mu \eta \bar{\delta}-\alpha(\mu \dot{\alpha})$
$\mu \eta \delta \delta-\dot{\varepsilon} \tau(\varepsilon \rho \circ \varsigma), \mu \eta \delta \bar{\delta} \varepsilon \tau(\varepsilon \in \rho O \cup)$
$\mu \eta \theta-(\varepsilon i \varsigma)$
$\mu \dot{\eta} \lambda-\omega \psi, \mu \hat{\eta} \lambda-o \pi(o \varsigma), \mu \eta \lambda-o ́ \pi(\omega \nu)$
$\mu \eta \tau \rho-\alpha(\gamma \dot{\rho} \tau \tau \eta)$
$\mu เ x \rho-\alpha\left(\delta เ x \eta_{\tau} \grave{\eta}_{s}\right)$
$\mu \mu-\omega(\delta \dot{\varrho} \varsigma)$
$\mu \varepsilon \xi-\alpha(\rho \chi \alpha \gamma \varepsilon \tau \tau \alpha)$
$\mu \tau \sigma-\alpha(\delta \varepsilon \lambda \varphi O \varsigma), \mu \tau \sigma-\alpha(\delta \varepsilon \lambda \varphi \rho U)$
$\mu \sigma \gamma-\alpha(\gamma \gamma \varepsilon ו \alpha), \mu \sigma \gamma-\alpha(\gamma \gamma \varepsilon i \alpha \varsigma)$
$\mu \nu-\hat{\varepsilon} \lambda(\lambda \eta \nu), \mu \sigma-\varepsilon \lambda(\lambda \eta \nu \omega v)$
$\mu \circ \gamma\llcorner\sigma-\alpha \psi-\varepsilon(\delta \dot{\alpha} \varphi \alpha)$
$\mu o t \chi-\alpha \gamma(\rho i \alpha), \mu o l \chi-\alpha \gamma\left(\rho i \alpha_{5}\right)$
$\mu \circ v-\alpha \dot{\mu}(\pi v \xi), \mu o v-\alpha \mu(\pi u ́ x \omega v)$
$\mu \circ v-\alpha \rho(\chi \circ \varsigma), \mu \circ v-\alpha \dot{\rho}(\chi \circ \cup), \mu \circ v-\alpha p(\chi\llcorner x o s)$
$\mu \circ v-\alpha \cup(\lambda \varepsilon \omega)$
$\mu 0 \nu-\eta \dot{\mu}(\varepsilon \rho \circ \varsigma), \mu O \nu-\eta \mu(\varepsilon \rho O U)$
$\mu 0 v-n_{p}\left(\eta_{\varsigma}\right), \mu \circ v-\tilde{n}_{p}\left(\varepsilon_{\varsigma}\right)$

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\muóv-i\pi(\piO\varsigma), \muOv-i\pi(\piov)
\muOv-ó\delta(O\cups), \muOv-o\delta(ov\tau\omegav)
\mu\nu-\varphi(\delta'\varepsiloń\omega)
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\mu\nu0-i\alpha\mu(\betaos), \mu\nu0-\iota\alphá\mu(\betaou)
\muup-\alpha\lambda(oi\varphii\alpha)
\mu\nu\rho-\varepsilon($oेs)
\muv\sigma\tau-\alpha\gamma(\omega\gamma\varepsiloń}\omega
\nuExp-\alphá\gamma (\gammaE\lambda\tauo\varsigma), \nuExp-\alpha\gamma(\gamma\varepsiloń\lambda\tauOu)
v\varepsilon\varphi\varepsilon\lambda-\etaү (\varepsilon\rho\varepsiloń\tau\eta\zeta)
vexp-\alphax(\alpha\delta\eta\mui\alpha)
\nuouv-\varepsilon\chi(óv\tau\omega\varsigma)
\nu\cupx\tau-\varepsilonү(\varepsilon\rho\tau\varepsiloń\omega)
\nu\cup*\tau-\etaү (op\varepsiloń\omega)
\nuuxt-no(s\varphir\s)
\nu\cupxt-oú(\rho\omegav), \nu\cupxt-oũ(\rhoم\varsigma)
\xi\varepsilon\nu-\alpha\gamma(\omega\gammaò\varsigma)
\xi
\xi\varepsilon\nu-\eta\lambda(\alpha\tau\varepsiloń\omega)
\delta\deltaे-\eta(\gammaòs)
\delta0-ov`(v\varepsilon\chi\alpha), \delta0-ov́(v\varepsilon\chi\alpha)
oix-oup(os)
oix-\omega\varphi(c\lambdai\alpha)
oiv-\alpha\nu0(\eta),oiv-\alphav0(\widetilde{\omegav})
oiv-sp(\alpha\sigma\tau\etaेs)
oiv-o\psi, olv-o\pi(o\varsigma), oiv-ó\pi(\omegav)
oiov-\varepsiloni, oiov-\varepsilon!
oió\sigma-\pi\varepsilon\rho, oió\sigma-\tau\varepsilon
O}xt\alphax|\sigma-(\chii\lambdatot
\deltax\tau-\eta\rho\rho(\eta\varsigma), \deltax\tau-\tilde{\eta}\rho(\varepsilon\varsigma)
ох\tau\tau\omegax\alpha|\varepsilonк-\varepsiloń(\tau\eta\varsigma)
\partial\lambdal\zeta-\alphav(\delta\rhoi\alpha)
\delta\lambda\iota\gamma-\alpha\rho}(\chi\eta\rho),\delta\lambda\lambda\iota\gamma-\alphap(\iota\sigma\taui\alpha
\deltà\lambdaı\gamma-ó\tau\varepsilon(\rhoO\varsigma), ठ̀\lambdaเ\zeta-o\tau\varepsiloń(\rhoOU)
o\lambda\lambdai\gamma-\omegap(o\varsigma), o\lambda< %-\omegaр(ou)
ơ\mu-\alphat(\muOs),\delta\mu-\alphai(\muO\nu)
\delta}\mu-\dot{\alpha}\lambda(l\chiO\varsigma),\delta \tilde{-\tilde{\alpha}\lambda(l\xi)
\delta}\mu-\alphav(\lambdao\varsigma),\delta\mu-\alpha\dot{v}(\lambdaov
\delta}\mu-\varepsilon\cup(vO\varsigma),\delta\mu-\varepsilonú(\nuOU),\delta\mu-\varepsilonv(\nu\varepsiloń\tau\eta\zeta
```



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o}\mu-!(\lambdaos),\delta\mu-i(\lambdaou),\delta \delta-l(\lambdai\alpha
\delta}\mu-0(\rho\circ\varsigma),\delta\mu-\delta\rho(ov), \delta\mu-o\rho(\delta\varphiю\rho\varsigma
ö\mu-oup(os), ó\mu-oúp(ou)
\delta}\mu-\omega\nu\nu(\nu\muо\varsigma),\delta\mu-\omegav(\dot{\mu
\delta}\mu-\mp@subsup{\omega}{\rho}{\prime}(\circ\varphiO\varsigma),\dot{\delta}\mu-\omega\rho(ó\varphi,O\varsigma
oेv-\eta\lambda (\alpha व ~\eta\zeta)
ô-\alpha}\lambda\(\mu\eta
\delta\pi\omega\sigma-oũv, \delta \delta\omega\omega\sigma-\tau\iota(oũv)
\delta\rhox-\omega\muó(\sigmaIOv), \grave{p x-\omega\muo(\sigmaiou)}
\delta\sigma-\eta\mu(\varepsilon\rho\rho\alphal)
\circ゙\sigma-\tau\varepsilon
%\sigma-tl\zeta
ö\tau-\alpha\nu
oű\delta-o\pi\omega\sigma-\tauu(o\tilde{v}), oư\delta-o\sigma(\tau\tau\sigmaoüv)
ovi0-\alpha\mu(\tilde{\omega})
oűx-(ouv), oủx-(oũv)
    - ou-x\omega(v)
ò\psi-\omega(viov),o̊\psi-\omega(viou)
\pi\alpha\iota\delta-o\lambda(\varepsiloń\tau\varepsilon!\rho\alpha)
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\(\pi \alpha \lambda \alpha i-\chi \theta(\omega \nu), \pi \alpha \lambda \alpha \mu-\chi \theta(\omega \nu \omega \nu)\)
\(\pi \alpha \lambda i v-, \pi \alpha \lambda i v-\)
\(\pi \alpha \lambda-i \omega(\xi \iota \varsigma), \pi \alpha \lambda-t \omega(\xi \varepsilon \omega \varsigma)\)
\(\pi \alpha \alpha v-\pi \alpha \nu-\)
    - \(\pi \alpha-v o ̀ \varsigma, \pi \alpha-\nu o ́ \varsigma, \pi \alpha-\nu \ell, \pi \alpha-\nu l, \pi \alpha-\nu \alpha\)
    - \(\pi \dot{\alpha}-\nu u\)
\(\pi \alpha \rho-\alpha \gamma(\omega), \pi \alpha \rho-\alpha \gamma(\gamma \varepsilon \bar{\varepsilon} \lambda \omega)\)
    - \(\pi \alpha \rho \alpha-\gamma \varepsilon(\dot{\nu} \omega)\)
    - \(\pi \alpha \rho \alpha-\gamma \eta(\rho \alpha \dot{\alpha} \omega)\)
    - \(\pi \alpha \rho \alpha-\gamma i(\gamma \nu 0 \mu \alpha!), \pi \alpha p \alpha-\gamma i(\gamma \nu o ́ \mu \varepsilon \theta \alpha)\)
    - \(\pi \alpha \rho \alpha ́-\gamma p(\alpha \mu \mu \alpha), \pi \alpha p \alpha-\gamma \rho(\alpha \varphi \grave{\eta})\)
    - \(\pi \alpha \rho \alpha-\gamma \cup(\mu \nu o ́ \omega)\)
\(\pi \alpha p-\alpha \varepsilon(i \delta \omega)\)
\(\pi \alpha \rho-\alpha i(\sigma: \circ \varsigma), \pi \alpha \rho-\alpha i(\sigma \sigma \omega), \pi \alpha \rho-\alpha i(\nu \varepsilon ́ \omega), \pi \alpha \rho-\alpha i(\sigma \sigma o ́ \mu \varepsilon \theta \alpha)\)
\(\pi \alpha p-\alpha \alpha \mu(\alpha, c \omega)\)
\(\pi \alpha p-\alpha \alpha 0 \lambda\) (ov \(\theta \varepsilon ́ \omega\) )
\(\pi \alpha p-\alpha x o v(\alpha \omega)\)
\(\pi \alpha \rho-\alpha \dot{\alpha} \alpha(v \sigma \mu \alpha), \pi \alpha \rho-\alpha \alpha o(\dot{\omega} \omega)\)
\(\pi \alpha \rho-\alpha \lambda(o \varsigma), \pi \alpha p-\alpha \lambda(o u), \pi \alpha p-\alpha \lambda(l \alpha)\)
    - \(\pi \alpha p \alpha-\lambda \dot{\alpha}(\mu \pi \omega), \pi \alpha \rho \alpha-\lambda \alpha(\mu \beta \alpha ́ \nu \omega)\)
    - \(\pi \alpha, \alpha \alpha-\lambda \varepsilon \gamma(\omega)\)
    - \(\pi \alpha \rho \alpha \dot{\alpha}-\lambda \varepsilon l(\psi!\varsigma), \pi \alpha \rho \alpha-\lambda \varepsilon i(\pi \omega), \pi \alpha p \alpha-\lambda \varepsilon l(\pi \tau \varepsilon ́ \sigma \nu)\)
        - \(\pi \alpha \rho-\alpha \lambda \varepsilon i \varphi(\omega)\)
    - \(\pi \alpha p \alpha ́-\lambda \mu(\nu O \varsigma), \pi \alpha p \alpha-\lambda i \mu(v o u)\)
    - \(\pi \alpha p \alpha-\lambda \circ \gamma(0 \varsigma), \pi \alpha p \alpha-\lambda o ́ \gamma(o u), \pi \alpha p \alpha-\lambda o \gamma(\zeta \zeta \rho \mu \alpha t)\)
    - \(\pi \alpha \rho \alpha \dot{\alpha}-\lambda u(\sigma \iota \varsigma), \pi \alpha p \alpha-\lambda u ́(\sigma \varepsilon \omega \varsigma), \pi \alpha p \alpha-\lambda u(\pi \varepsilon ́ \omega)\)
\(\pi \alpha \rho-\alpha \mu \alpha(\rho \tau \alpha ́ \nu \omega)\)
\(\pi \alpha \rho-\alpha \mu \beta(\lambda \dot{v} \nu \omega)\)
\(\pi \alpha \rho-\alpha \mu \varepsilon(i \beta \omega)\)
    - \(\pi \alpha \rho \alpha-\mu \varepsilon \dot{\varepsilon} \nu(\omega)\)
    - \(\pi \alpha \rho \alpha-\mu \varepsilon \tau(\rho \varepsilon ́ \omega)\)
\(\pi \alpha p-\alpha \mu \pi(\dot{\varepsilon} \chi \omega)\)
\(\pi \alpha \rho-\alpha \nu \alpha(\gamma \iota \gamma \nu \omega \sigma \alpha \omega)\)
    - \(\pi \alpha \rho \alpha-v \alpha_{l}(\varepsilon \tau \alpha \dot{\alpha} \omega)\)
\(\pi \alpha \rho-\alpha \nu i(\eta \mu \nu), \pi \alpha \rho-\alpha \nu(\sigma \chi o ́ \mu \varepsilon \theta \alpha)\)
    - \(\pi \alpha p \alpha-v c x(\dot{\alpha} \omega)\)
\(\pi \alpha \rho-\alpha v o i \gamma(\omega)\)
\(\pi \alpha \rho-\alpha \nu \tau \alpha\)
\(\pi \alpha p-\alpha ́ o(\rho \circ \xi), \pi \alpha p-\alpha o ́(\rho o u)\)
\(\pi \alpha \rho-\alpha \pi \alpha \tau(\alpha \omega)\)
\(\pi \alpha \rho-\alpha \pi \alpha \varphi(i \sigma \pi \omega)\)
\(\pi \alpha \rho-\dot{\alpha} \pi \tau(\omega)\)
\(\pi \alpha \rho-\alpha \rho\left(\theta_{\rho} \eta \sigma\llcorner\varsigma), \pi \alpha p-\alpha p\left(\theta_{\rho} \eta \sigma \varepsilon \omega \varsigma\right)\right.\)
    - \(\pi \alpha \rho \alpha ́-p p(\nu \mu \alpha), \pi \alpha p \alpha-\rho p(\dot{\mu} \mu \alpha \tau o \varsigma)\)
\(\pi \dot{\alpha} \rho-\alpha \nu(\lambda o \varsigma), \pi \alpha \rho-\alpha \cup ́(\lambda \circ u), \pi \alpha \rho-\alpha v(\delta \dot{\alpha} \omega)\)
\(\pi \dot{\alpha} \rho-\varepsilon(\delta \rho \circ \varsigma), \pi \alpha \rho-\varepsilon \in(\delta \rho o u), \pi \alpha \rho-\varepsilon(\gamma \gamma \rho \alpha \dot{\alpha} \tau \tau u)\)
    - \(\pi \alpha-\rho \varepsilon \omega, \pi \alpha-p \varepsilon \varepsilon(\iota \varsigma)\)
\(\pi \dot{\alpha} \rho-\eta(\mu \alpha t), \pi \alpha \rho-\dot{\eta}_{( }(\gamma \circ \rho o \varsigma), \pi \alpha p-\tilde{\eta}(\lambda \iota \xi), \pi \alpha \rho-\eta(\beta \dot{\alpha} \omega)\)
\(\pi \dot{\alpha} \rho-1(\sigma \sigma \varsigma), \pi \alpha \rho-i(\sigma o u), \pi \alpha \rho-t\left(\pi \pi \varepsilon v^{\omega} \omega\right)\)
\(\pi \dot{\alpha} \rho-o(\delta o \varsigma), \pi \alpha \rho-\delta \dot{(\delta O U}), \pi \alpha \rho-o(\delta \varepsilon \dot{u} \omega)\)
    - \(\pi \alpha\) - \(\rho D_{s}\)
    - \(\pi \alpha-\rho o ́ v(\tau o \varsigma)\)
\(\pi \alpha \rho-p \eta(\sigma t \alpha)\)
\(\pi \alpha \rho-\dot{v}(\varphi \alpha, \nu \circ \nu), \pi \alpha \rho-v(\varphi \alpha i v \omega)\)
\(\pi \dot{\alpha} \rho-\omega(\chi \rho \circ \varsigma), \pi \alpha \rho-\omega(\chi \rho \circ \cup), \pi \alpha \rho-\omega(v u \mu i \alpha)\)
    - \(\pi \alpha-\rho \omega \dot{\nu}, \pi \alpha-p \omega े\)
\(\pi \alpha \tau p-\alpha \gamma(\alpha \theta \circ \varsigma), \pi \alpha \tau p-\alpha \gamma(\alpha \theta i \alpha)\)
\(\pi \alpha \tau p-\alpha \lambda(o i \alpha \varsigma)\)
\(\pi \alpha \tau p-\omega v \dot{( }(\mu \nu \rho \varsigma), \pi \alpha \tau p-\omega v \nu(\mu i o u)\)
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\(\pi \alpha \nu \sigma-\alpha \nu \varepsilon(\mu \circ \varsigma), \pi \alpha \cup \sigma-\alpha v \varepsilon(\mu \circ \cup)\)
\(\pi \varepsilon \delta-\alpha i\left(\chi \mu \rho_{s}\right), \pi \varepsilon \delta-\alpha!(\chi \mu i o u)\)
\(\pi \varepsilon \delta-\alpha \circ(\rho \circ \varsigma), \pi \varepsilon \delta-\alpha \circ ́(\rho \circ u)\)
\(\pi \varepsilon \delta-\alpha \dot{p}(\sigma \omega \rho), \pi \varepsilon \delta-\alpha p(\sigma i \sigma u)\)
\(\pi \varepsilon \zeta-\alpha p(\chi \circ \varsigma), \pi \varepsilon \zeta-\alpha \rho(\chi \circ u)\)
\(\pi \varepsilon \zeta-\bar{\varepsilon} \tau\left(\alpha, \rho \rho_{5}\right), \pi \varepsilon \zeta-\varepsilon \tau(\alpha i p o u)\)
\(\pi \varepsilon \varepsilon \theta-\alpha(\nu \omega \rho), \pi \varepsilon \vartheta \theta-\alpha(\nu \alpha \dot{\gamma} \alpha \eta)\)
\(\pi \varepsilon \iota \theta-\eta_{1}(\nu \circ \varsigma), \pi \varepsilon \iota \theta-\eta(v i \circ u)\)
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\(\pi \varepsilon \mu \pi \dot{\alpha} \delta-\alpha(\rho \chi \circ \varsigma), \pi \varepsilon \mu \pi \alpha \delta-\alpha(\rho \chi O \cup)\)
\(\pi \varepsilon \mu \pi-\omega(\beta \circ \lambda \circ \nu), \pi \varepsilon \mu \pi-\omega(\beta o \hat{\lambda} \circ \nu)\)
\(\pi \varepsilon \nu \theta-\eta(\rho \varepsilon(\rho \circ \varsigma), \pi \varepsilon v \theta-\eta \mu \varepsilon ́(\rho o u), \pi \varepsilon \nu \theta-\eta \mu \varepsilon(\rho i \alpha)\)
\(\pi \varepsilon v \theta-\eta \mu \mathrm{l}(\pi о \delta) \alpha \bar{\circ} \circ \varsigma)\)
\(\pi \tilde{\varepsilon} \nu \tau-\alpha \theta(\lambda o v), \pi \varepsilon \nu \tau-\alpha \theta(\lambda o u)\)
\(\pi \varepsilon \nu \tau-\eta_{\rho}(\eta \varsigma), \pi \varepsilon \nu \tau-\tilde{n}_{p}(\varepsilon \varsigma)\)
\(\pi \lambda \varepsilon O \nu-\dot{\varepsilon}(x \tau \eta \mu \alpha), \pi \lambda \varepsilon \circ \nu-\varepsilon(x \tau \varepsilon ́ \omega)\)
\(\pi \lambda \dot{\eta} \xi-i \pi(\pi \circ \varsigma), \pi \lambda \eta \xi-i \pi(\pi \sigma u)\)
\(\pi \lambda \eta \sigma-i \sigma(\tau 10 \varsigma), \pi \lambda \eta \sigma-\iota \sigma(\tau i O \cup)\)
\(\pi \lambda \circ \cup \theta-v\left(\gamma^{i \varepsilon ı} \alpha\right)\)
\(\pi \lambda \circ \Delta \tau \tau-\alpha p(\chi \circ \varsigma), \pi \lambda \circ \cup \tau-\alpha \rho(\chi \circ \cup)\)
\(\pi 0 \delta-\alpha \beta\) ( \(\rho \dot{\rho} \varsigma)\)
\(\pi \mathrm{o} \mathrm{\delta}-\dot{\alpha} \gamma(\rho \alpha), \pi \mathrm{o} \delta-\alpha \gamma(\rho \bar{\omega})\)
\(\pi \circ \delta-\dot{\varepsilon} \cup(\delta \cup \tau \circ \varsigma), \pi \circ \delta-\varepsilon v(\delta u ́ \tau O U)\)
\(\pi 0 \delta-\eta_{\rho}(\eta \varsigma), \pi 0 \delta-\tilde{n}_{\rho}\left(\varepsilon_{\varsigma}\right), \pi 0 \delta-\eta \gamma(\dot{\gamma} \varsigma)\)
\(\pi о \mu-\alpha ́(\nu \omega \rho), \pi о \mu-\alpha(\nu \omega \dot{\rho} \omega \nu)\)
\(\pi о \sigma \sigma-\dot{\eta}(\mu \alpha \rho \circ \varsigma), \pi о \sigma \sigma-\tilde{\eta}(\mu \alpha \rho), \pi \rho \sigma \sigma-\eta(\mu \dot{\alpha} \rho \omega \nu)\)
лро́б-, лроб-
    - \(\pi \rho 0-\sigma \tau \alpha u(\rho o ́ \omega)\)
    - \(\pi \rho o-\sigma \tau \dot{\epsilon} \lambda \lambda(\omega)\)
    - \(\pi \rho o-\sigma \tau \varepsilon \nu(\omega), \pi \rho o-\sigma \tau \varepsilon \nu(\alpha \hat{\alpha} \omega)\)
    - \(\pi \rho o ́-\sigma \tau \varepsilon \rho v(o \varsigma), \pi \rho o-\sigma \tau \varepsilon \rho v(o u), \pi \rho o-\sigma \tau \varepsilon \rho \nu(i \delta ı \nu)\)
    - \(\pi \rho o ́-\sigma \tau \omega(o v), \pi \rho o-\sigma \tau \omega(o u), \pi \rho o-\sigma \tau \widetilde{\omega}(o v)\)
    - \(\pi \rho o-\sigma v(\gamma \gamma i \gamma \nu \circ \mu \alpha l)\)
        - \(\pi \rho \circ \sigma-\cup \pi(\varepsilon \rho \beta \dot{\alpha} \lambda \lambda \omega)\)
    - \(\pi \rho o ́-\sigma \varphi \alpha \gamma(\mu \alpha), \pi \rho o-\sigma \varphi \alpha \dot{\gamma}(\mu \alpha \tau \circ \varsigma)\)
\(\pi \rho \omega \theta-\dot{\eta}(\beta \eta)\)
\(\pi \rho \omega \tau-\alpha \gamma(\omega v \tau \sigma \tau \grave{\eta})\)
\(\pi u \gamma-\dot{\alpha} \rho(\gamma O \varsigma)\)
\(\pi \cup \theta-\alpha \gamma(o p \alpha s)\)
\(\pi \cup \lambda-\alpha \gamma(o ́ p o s)\)
\(\pi \cup \lambda-\alpha \rho(\tau \eta \zeta), \pi \cup \lambda-\alpha \rho(\tau \widetilde{\omega} v)\)
\(\pi \nu \lambda-\omega p\left(\partial_{s}\right)\)
\(\pi \cup \rho-\alpha \dot{\alpha}(\rho \alpha), \pi \cup \rho-\alpha \gamma(\rho \widetilde{\omega} v)\)
\(\pi \cup p-\alpha x(\tau \varepsilon \in \omega)\)
\(\dot{\rho} \alpha \psi-\varphi(\delta \dot{\rho} \varsigma)\)
\(\dot{p} \zeta \zeta-\omega p\left(\nu \chi \chi^{\prime} \omega\right)\)
\(\dot{\rho} i \psi-\alpha \sigma(\pi \iota \varsigma), \dot{p} \downarrow \psi-\alpha \sigma(\pi \iota \delta o \varsigma)\)
рं \(\dot{\phi}-o \pi(\lambda o \varsigma), \dot{\rho} \psi \psi\)-ó \(\pi(\lambda o u)\)
\(\sigma t-\alpha \gamma(\omega \gamma \dot{\varrho})\)
\(\sigma \kappa \lambda \eta p-\alpha(\gamma \omega \gamma \varepsilon \epsilon)\)
\(\sigma x \cup \theta p-\omega \pi\left(\dot{o}_{s}\right)\)
\(\sigma \pi \varepsilon \dot{\sigma} \sigma-\iota \pi(\pi \circ \varsigma)\), \(\sigma \pi \varepsilon \cup \sigma-i \pi(\pi o u)\)
\(\sigma \pi 0 \nu \delta-\alpha p\left(\chi^{i \alpha}\right)\)
\(\sigma \tau \varepsilon ́ \gamma-\alpha p(\chi \circ \varsigma), \sigma \tau \varepsilon \gamma-\alpha p(\chi \circ \cup)\)
\(\sigma \tau \varepsilon \rho \circ \pi-\eta \gamma(\varepsilon \rho \varepsilon \dot{\varepsilon} \tau \eta \zeta)\)
\(\sigma \tau р \alpha \tau-\eta \gamma(\dot{\rho} \varsigma)\)
\(\sigma \tau p \alpha \tau-\eta \lambda(\alpha, \eta \zeta)\)
สúv-, \(\sigma u v-\)
\(\sigma \omega \mu-\alpha \sigma(x \dot{\varepsilon} \omega)\)
```

$\tau \varepsilon \theta_{\rho-1}-i \pi(\pi \sigma \varsigma), \tau \varepsilon \theta_{\rho}-i \pi(\pi \circ u), \tau \varepsilon \theta_{\rho}-i \pi(\pi o \beta \dot{\alpha} \tau \eta \varsigma)$
$\tau \varepsilon \subset \chi-\tilde{n}_{1}(\rho \eta \varsigma), \tau \varepsilon \iota \chi-\tilde{\eta}(\rho \varepsilon \varsigma)$
$\left.\tau \varepsilon!\chi-\eta_{1}(\rho \eta \varsigma), \tau \varepsilon l\right)$
$\tau \varepsilon \times \nu-0 \lambda(\varepsilon \tau \varepsilon!\rho \alpha)$
$\tau \varepsilon \chi \cup-0 \lambda(\varepsilon ́ \tau \varepsilon \iota \rho \alpha)$
$\tau \varepsilon \rho \psi i-\mu($ (ßротоц), $\tau \varepsilon \rho \phi 1-\mu$ (ßро́tou)
$\tau \varepsilon \sigma \sigma \alpha \rho \varepsilon \sigma-(\chi \alpha i \delta \varepsilon \varkappa \alpha)$, $\tau \varepsilon \sigma \varepsilon \rho \varepsilon \sigma-(\chi \alpha i \delta \varepsilon \varepsilon \alpha \alpha)$
$\tau \varepsilon \tau \rho-\alpha \rho \chi\left(\eta_{\varsigma}\right), \tau \varepsilon \tau \rho-\alpha \rho \chi(\bar{\omega} \nu)$
$\tau \varepsilon \tau p-\hat{\eta}_{p}\left(\eta_{\zeta}\right), \tau \varepsilon \tau \rho-\tilde{n}_{p}\left(\varepsilon_{\zeta}\right)$
$\tau \varepsilon \tau \rho-\omega \rho \circ(\varphi \circ \varsigma), \tau \varepsilon \tau \rho-\omega \rho \circ(\rho \circ u)$

$\tau r_{i} \lambda-\omega \pi(\dot{o} \varsigma)$
$\tau \eta_{1} \nu-\alpha \lambda(\lambda \omega \varsigma)$
$\tau \mu-\alpha \lambda \varphi\left(\dot{r}_{\varsigma}\right)$

тó $\xi-\alpha p(\chi \circ \varsigma), \tau o \xi-\alpha p(\chi \circ \cup)$
$\tau \circ \xi-\bar{\eta}(\rho \eta \varsigma), \tau \circ \xi-\tilde{\eta}(\rho \varepsilon \varsigma)$
$\tau \rho \alpha \gamma-\dot{\varepsilon} \lambda(\alpha \varphi \circ \varsigma), \tau \rho \alpha \gamma-\varepsilon \lambda(\dot{\alpha} \varphi \circ \cup)$
$\tau \rho \alpha \gamma-\varphi(\delta \dot{o} \varsigma)$
$\tau p \alpha \pi-\varepsilon \mu \pi(\alpha \lambda(\nu)$
трє: $\varsigma-\chi \alpha i(\delta \varepsilon x \alpha)$
$\tau р เ \sigma-\alpha \theta(\lambda \cos ), \tau p \omega-\alpha \theta(\lambda i o u)$
$\tau р \vee-\alpha \rho(\imath \theta \mu \varsigma), \tau \rho เ \sigma-\alpha p(i \theta \mu \circ u)$
$\tau p เ \sigma-\alpha \sigma(\mu \varepsilon \nu \circ \varsigma), \tau p \iota \sigma-\alpha \sigma(\mu \varepsilon ́ v o u)$

тріб- $\mu \alpha$ (хх́ріоц)
$\tau p เ \sigma-\mu \dot{( }(\rho t o t), \tau p \omega-\mu \nu(\rho i \omega v)$
$\tau \rho \mid \sigma-\chi(i \lambda 10 t)$
т $p \circ \chi-\dot{\eta} \lambda(\alpha \tau \circ \varsigma), \tau p \circ \chi-\eta \lambda(\dot{\alpha} \tau \eta \varsigma)$
$\tau \cup \cup \beta-\alpha(\dot{\nu} \lambda \eta \zeta), \tau \cup \mu \beta-\dot{\eta}_{1}(\rho \eta \zeta), \tau \cup \mu \beta-\tilde{\eta}(\rho \varepsilon \varsigma), \tau \cup \mu \beta-\omega(\rho \dot{\chi} \chi \circ \varsigma)$
$\dot{\delta} \mu \nu-\omega(\delta i \alpha)$
$\dot{\Delta} \pi-\alpha(i \theta \rho \circ \varsigma), \dot{\delta} \pi-\alpha(\gamma \omega), \dot{\delta} \pi-\alpha(\gamma \circ \rho \varepsilon \dot{v} \omega)$
- $\dot{v}-\pi \alpha i \theta \alpha, i-\pi \alpha i, i-\pi \alpha i$
- $\mathrm{i}-\pi \alpha \mathrm{p}$
$\dot{\sim} \pi-\varepsilon(\mu \nu), \dot{\varepsilon} \pi-\varepsilon(\gamma \gamma \cup \circ \varsigma), i \pi-\varepsilon(\gamma \varepsilon i \rho \omega)$
- $\dot{j}-\pi \varepsilon i \rho, ~ i-\pi \varepsilon i p$

- $\dot{\pi} \pi-\varepsilon p \varepsilon \theta(i \zeta \omega)$
- $\dot{0} \pi$ - $\varepsilon p \varepsilon i(\delta \omega)$



ن $\pi-\eta \mu(\dot{v} \omega)$
$\dot{\delta} \pi-\eta \eta \nu(\varepsilon \mu \circ \varsigma), \dot{i} \pi-\eta \nu(\dot{\varepsilon} \mu \circ \rho \varsigma)$

í $\pi-\eta p(\varepsilon ́ \tau \eta \varsigma)$
i $\pi-\eta \chi(\varepsilon \omega)$
$\dot{i} \pi-i(\eta \mu \iota), \dot{\pi} \pi-t(\sigma \chi \nu \epsilon \in \omega)$
i $\pi$-ol ( $\delta \dot{\varepsilon}(\omega)$
$\dot{i} \pi-\alpha \dot{u}(\lambda \omega \varsigma), \dot{i} \pi-o u(\delta \alpha i o s)$
- ímoúp- $\gamma(\eta \mu \alpha)$, ímoup- $\gamma(\varepsilon \omega)$
$\dot{\cup} \pi-\omega \pi(\iota O \nu), \dot{\cup} \pi-\omega \pi(\mathrm{iov})$

Ü甲-, Úழ-
- $\dot{\delta}-\varphi \rho p \beta\left(\dot{o}_{5}\right)$
$i \psi-\alpha(\gamma \dot{o} \rho \alpha \varsigma)$
$i \psi-\varepsilon\left(\rho \varepsilon \varphi \dot{n}_{\varsigma}\right)$

טч- $\eta$ (үópos)
i $\psi$-óp(O甲Os), i $\psi$-op(ó $\varphi 0 \cup)$
$\varphi \varepsilon \rho-\varepsilon ́ \gamma(\gamma \cup \circ \varsigma), \varphi \varepsilon \rho-\varepsilon \gamma(\gamma \cup \cup O U)$
$\varphi \varepsilon \rho-\omega \nu \cup(\mu \circ \varsigma), \varphi \varepsilon \rho-\omega \nu \cup(\mu O \cup)$

```
\varphi0v-ó\pi(\omega\rhoov), \varphi0\omegav-o\pi(\omega\rhoou)
\varphi0/\sigma-\eta}(v\omega\rho),\varphi0|\sigma-\eta(v\omega\rho\omega\nu
\varphi \varphi \ \lambda - , \varphi \| \lambda -
```



```
\varphii-\lambdal(o\varsigma), \varphil-\lambdai(\alpha), \varphil-\lambdat(xo\varsigma)
        - \varphii\lambda-1\alpha\tau(\rho\varepsiloń}\omega
        - \varphii\lambda-i\pi\pi(os), \varphii\lambda-i\pi\pi(ov), \varphii\lambda-i\pi\pi(ixoेs)
\varphi\rho\varepsilon\nu-\etaं\rho(\eta\zeta), \varphi\rho\varepsilon\nu-\etaँ\rho(\varepsilon\varsigma)
\varphipоúр-\alphap(\chiо\varsigma), \varphipоир-\alphaр(\chiоu)
\varphi\cup\gamma-\alphal\chi(\mu\eta\zeta)
\varphiú\lambda-\alphap(\chiO\varsigma), \varphi\cup\lambda-\alphá\alpha(\chiO\cup)
\varphi\cupं\lambda-o\pi(i\varsigma), \varphi\cup\lambda\-ó\pi(i\deltao\varsigma), \varphi\cup\lambda-o\pi(i\delta\omegav)
\varphi\omegat-\alpha\gamma(\omega\gammaoे\varsigma)
\chi\alpha\lambda-\alphap\gamma(ós)
\chi\alpha\lambda!\nu-\alpha\gamma(\omega\gamma\varepsiloń\omega)
\chi\alpha}\lambdax-\alpha\sigma(\pit\varsigma),\chi\alpha\lambdax-\alphá\sigma(\pil\delta\sigma\varsigma),\chi\alpha\lambdax-\alpha\sigma(\pii\delta\omegav
\chi}\alpha\lambdax-\varepsilon\mu(\betaO\lambdaO\varsigma),\chi\alpha\lambdax-\varepsilon\mu(\betaó\lambdaOU
\chi}\alpha\lambdax-\eta\\lambda(\alpha\tauO\varsigma),\chi\alpha\lambdax-\eta\lambda(\dot{\alpha}\tauOU
\chi\alpha\lambdax-n\rho(\eta\varsigma), \chi\alpha\lambda\alpha-\tilde{np}(\varepsilon\varsigma)
\chiO\mu-\varepsilonú(v!O\nu),\chi\chi\mu-\varepsilonU(viOU)
\chi&tp-\alpha\gamma(\omega\gammaò\varsigma)
\chi\varepsilonь-\alpha\pi(\tau\alphá}\zeta\omega
\chi\varepsilon!p-\alpha\psi(i\alpha)
\chi \v-\sigma\sigma(pls)
\chi\eta\nu-\alpha\lambda(\omega\pi\eta\xi)
\chiо\rho-\alpha(\gammaòs)
\chiop-\eta(ros)
\chiр\cup\sigma-\alpha(i\varepsilon\tauо\varsigma), \chiр\cup\sigma-\alpha}(\mu\pi\tau\cup\xi
\chiр\cup\sigma-\varepsilon\lambda(\varepsilon\varphi\alpha~\tau\tau\eta\\lambda\varepsilonxт\rhoо\varsigma)
\chiр\cup\sigma-\varepsilońv(\delta\varepsilon\tauо\varsigma), \chi.\cup\cup\sigma-\varepsilon\nu(\delta\deltá\tauOU)
\chi.\cup\sigma-\varepsilonр(\alpha\sigma\tau\grave{\zeta})
\chiр\cup\sigma-\etaं\lambda(\alpha\tauо\varsigma), \chiр\cup\sigma-\eta\lambda(\alpháx\alphaто\varsigma)
\chi\rho\cup\sigma-\tilde{\eta}\rho(\varepsilon\varsigma)
\chi.р\cup\sigma-о́ро(\varphiОs), \chiр\cup\sigma-оро́(\varphiои)
\chipu\sigma-\omegav(\varepsiloń\omega)
\chi.p\cup\sigma-\omega\pi(i\deltaO\varsigma),\chi.р\cup\sigma-\widetilde{\omega}\pi(\iota\varsigma),\chi.p\cup\sigma-\omega\pi(i\delta\omega\nu)
\chipu\sigma-\omegap(u\chi\varepsiloń\omega)
\psisv\delta-\dot{\alpha}(\tau\tau\iota\chiO\varsigma), \psi\varepsilon\nu\delta-\alpha(\lambda\varepsilon\xi\alphav\delta\rhoо\varsigma)
\psi\varepsilonט\delta-\varepsilonv(\tilde{\varepsilon}\delta\rho\alpha)
ф\varepsilon\cup\delta-\varepsilon\pi(\
\psi\varepsilon\cup\delta-\etaү (o\rho\varepsiloń\omega)
\psi\varepsilon\nu\deltaठ-\etap (\alpha<\lambda\tilde{\eta}\varsigma)
\psisu\delta-óp(x!os), \psi\varepsilon\cup\delta-op(xíou)
\psi\cup\chiр\rho-\tilde{\eta}\lambda(\alpha\tauO\varsigma), \psi\cup\chi\rho-\eta\lambda(\alphá~OU)
\omega\mu-\eta\sigma(\tau\dot{\eta})
\omega}\sigma-\alphav-\varepsilonl,\omega\mp@code{\omega}\sigma-\alphav-\varepsilon
\omega\mp@code{\sigma-\alphaút\omegac}
\dot{\omega}\sigma-\varepsiloni,}\dot{\omega}\sigma-\varepsilon
\omega\sigma\pi\varepsilonр-\varepsiloni, \dot{\omega}\pi\varepsilon\rho-\varepsiloni
```


## 6 The fundamental rules of Latin hyphenation, and the corresponding patterns

Taken from [Chi] (9.56-9.59), here are the rules of Latin hyphenation and the necessary patterns ( $v_{n}, n \geq 1$ will be vowels, including $æ$ and $\propto$, and $c_{n}, n \geq 1$ consonants):

1. A Latin word has as many syllables as it has vowels or diphthongs ( $æ$, au, ei, eu, œ, ui). Concerning word division, this rule should be interpreted as "vowel clusters should be separated, except when they form a diphthong": $v_{1}-v_{2}$, for $\left(v_{1}, v_{2}\right) \notin$ $\{(a, e),(a, u),(e, i),(e, u),(o, e),(u, i)\}$. The necessary patterns are a1a, a1æ (since $\mathrm{TEX}_{\mathrm{E}}$ considers $\mathfrak{m}$ as one character) a1i, a1o, a1œ (same remark) e1a, e1æ, e1e, e1o, e1æ, i1a, i1æ, i1e, i10, i1œ, i1i, i1u, 01a, o1æ, 01i, o1o, 01œ, o1u, u1a, u1æ, u1e, u1o, u1œ, u1u.
2. When a single consonant occurs beTWEEN TWO VOWELS, DIVIDE BEFORE THE CONSONANT: $v_{1}-c_{1} v_{2}$. The required patterns will be $1 \mathrm{ba}, 1 \mathrm{~b} \neq . .1 \mathrm{zu}$.
3. In the case of two or more consonants, divide before the last consonant exCEPT in THe COMbinations: mute ( $p, p h, b$, $t, t h, d, c, c h, g)+\operatorname{LIQUID}(l, r)$, AND $q u$ OR $g u$. The first part of this rule can be expressed as

- $v_{1} c_{1} \ldots c_{n-3^{-} c_{n-2} c_{n-1} c_{n} v_{2}}$
if $\left(c_{n-2}, c_{n-1}\right) \in\{(p, h),(t, h),(c, h)$ and $c_{n} \in\{l, r\}$,
- $v_{1} c_{1} \ldots c_{n-2}-c_{n-1} c_{n} v_{n}$ if $c_{n-1} \in\{p, b, t, d, c, g\}$ and $c_{n} \in\{l, r\}$, and
- $v_{1} c_{1} \ldots c_{n-1}-c_{n} v_{2}$, otherwise.

The required patterns will be ph21, ph2r ... $\mathrm{ch} 2 \mathrm{r}, \mathrm{p} 21 \ldots \mathrm{~g} 2 \mathrm{r}$ and $\mathrm{p} 2 \mathrm{~h}, \mathrm{t} 2 \mathrm{~h}, \mathrm{c} 2 \mathrm{~h}$ which is not stated in the rule but seems to be an implicit consequence, especially since "th", "ph", "ch" are just transliterations of the Greek letters $\theta, \varphi, \chi$.

The second part of the rule ("and $q u$ or $g u "$ ) is not clear. According to the examples given in [Chi] ("e-quus", "lin-gua") the author estimates that the correct interpretation is "consider ' $q u$ ' and ' $g u$ ' as single consonants". It follows from this interpretation, that these two clusters form exceptions to rule 1 and that hyphenations "qu-a", "gu-a" ... "gu-u" should be prohibited. The required patterns are qu2a ...gu2u.
4. Compound words are separated first into their component elements; within each element the foregoing rules apply. The patterns needed to fulfill this rule will be discussed in next section.

There is no mention of minimal left and right hyphenations; after comparing several Latin editions, the author considers the traditional values for \lefthyphenmin and \righthyphenmin to be 2 and 3 (as in English).

## 7 Hyphenation of Latin compound words

As with ancient Greek, the first idea would be to make patterns out of roots: "ab" is such a root, a pattern $a b$ would insure hyphenation of "abundare", "in-ab-undare" and so forth. The problem is again that the cluster "ab" is contained in thousands of other words, where it should be hyphenated as "a-b" ("la-bor", "pro-ba-bi-lis", "fa-bu-la", etc.). Therefore the same method is applied as in ancient Greek: only beginnings of words are taken into account. As the reader will see in next section where all patterns are listed, hyphenation ab- at the beginning of a word is a general rule, with certain exceptions ("a-bacus", "a-bitus", and so forth). To hyphenate correctly the word "abs-cidere", a pattern "abs-ci" has been introduced; this pattern produces wrong hyphenation of word "ab-scindere", and so a second pattern "ab-scin" is introduced.

This explains the format of the pattern list in next section: indentation and the symbol indicate entries, exceptions and exceptions to exceptions. The endings of words placed between parentheses are just examples, THEY ARE NOT TAKEN into account in pattern construction. Entries in boldface are "general rules". For these, no example is given. The same format has been used in the list of patterns for ancient Greek compound words, in section 5 .

## 8 Patterns for Latin compound words

ab-

- a-bac(us)
- a-bit(us)
- abs-ce(dere)
- abs-ci(dere)
- ab-scin(dere)
- abs-co(ndere)
- abs-que
- abs-te (mius)
- abs-ti(nere)
- abs-tr (ahere)
ad-
a-gnasc(i)
amb-i(gere)
antid-ea
a-sc(endere)
a-sperg(ere)

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a-spern(ari)
a-spi(cere)
a-ste(rnere)
a-sti(pulari)
a-stre(pere)
a-strin(gere)
a-strue(re)
a-stup(ere)
cav-j(dium)
circum-
cis-al(pinus)
cis-rh(enanus)
com-
    - co-met (es)
    - co-mi (cus)
    - co-mff(dia)
de-sc(endere)
de-sp(icere)
de-st (inare)
di-ch(oreus)
di-gn(oscere)
dir-im(ere)
di-scrib(ere)
di-sperg(ere)
di-spi(cere)
di-sta(re)
di-sting (uere)
ex-
id-eo
in-
    - i-nan(is)
            - ianim(us)
    - ind-ue(re)
    - ind-ep(tus)
    - ind-ig(es)
    - ind-ip(iscor)
    - ind-ue(re)
    - ini-ti(a)
inter-
long-jv(us)
neg-oti(um)
ob-
    - obli-vi(o)
    - oblon-(gus)
    - obff-di(re)
pjn-ins(ula)
per-, post-, prj-
prod-ir(e)
prod-es(se)
prod-ig(ere)
pro-sc(Jnium)
pro-sp(ectus)
pro-st(are)
quinc-un( \(x\) )
quot-an(nis)
re-
- red-(arguere)
    - re-don(are)
    - re-dor(mire)
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```
    - re-duc(ere)
sat-ag(ere)
satis-ac(cipere)
sem-un(ciarius)
sem-us(tulatus)
sesc-en(naris)
sic-ut(i)
sub-, super-
su-scr (ibere)
su-sp(icere)
ter-un(cius)
trans-ab-(ire)
trans-
    - tran-sil(ire)
    - tran-su(ere)
    - trans-us(que)
vel-ut(i)
```


## 9 Examples

Follow some examples of hyphenated ancient Greek and Latin texts. The symbol $\div$ indicates hyphenation using patterns from sections 5 and 8.













 [ $\pi \alpha-\rho \grave{\alpha}$ tòv $\pi \alpha-\tau \dot{\varepsilon}-\rho \alpha$ toũ Kú-pou], $\alpha \alpha i ~ \tau \alpha \tilde{u}-\tau \alpha$ oùx $\dot{\varepsilon}-\pi i$
 pov. Taũ- $\tau \alpha$ oi $\sigma \tau \rho \alpha \tau \div \eta \gamma o i$ Kú-p $\omega \dot{\alpha} \pi \div \dot{\eta} \gamma \gamma-\gamma \varepsilon \lambda-\lambda o v$.



 $\nu 1-$ xoü oü- $\tau \omega \varsigma$ ¿̀- $\tau \varepsilon i-\sigma \theta \eta$.
from $\Xi \varepsilon$-vo- $\varphi \omega \bar{\omega}$-тos Kú-pov " $A-\nu \alpha-\beta \alpha-\sigma \tau \varsigma$. [ $\Xi \varepsilon v]$
Flu-men est Arar, quod per fi-nes Hæ-du-o-rum et Se-qua-no-rum in Rho-da-num in-fluit, in-cre-dibili le-ni-tate, ita ut ocu-lis in ut-ram par-tem fluat iu-di-cari non pos-sit. Id He-lu-e-tii ra-ti-bus ac lin-tri-bus iunc-tis trans $\div \mathrm{i}$-bant. Vbi per ex-plo-ra-tores Cæ-sar cer-tior fac-tus est tres iam par-tes co-pia-rum He-lu-e-tios id flu-men tra-du-xisse, quartam fere par-tem citra flu-men Ara-rim re-li-quam
esse, de ter-tia ui-gillia cum le-gi-o-ni-bus tri-bus e cast-ris pro-fec-tus ad eam par-tem pe-ru-e-nit quæ non-dum flu-men trans $\div$ i-e-rat. Eos im-pe-di-tos et in $\div 0$-pi-nan-tes ad-gres-sus mag-nam par-tem eorum con-ci-dit: re-li-qui sese fugæ man-da-runt atque in pro-xi-mas si-luas ab-di-de-runt.

> from Cæ-sa-ris Com-men-ta-rii de Bello Gal-lico. [Cæ]

## 10 Availability

The files AGRhyphen.tex and LAThyphen.tex containing hyphenation patterns for ancient Greek and Latin (as described in this paper) are part of the ScholarTEX package.

The hyphenation patterns for modern Greek mentioned in section 2 (file GRhyphen.tex) are in the public domain; they are included in Euro-OzTEX and can also be obtained directly from the author. Readers interested in Greek (ancient or modern) are invited to join the ELLHNIKA discussion list, by sending the SUBSCRIBE ELLHNIKA <name> command to LISTSERV@DHDURZ1.BITNET.

## References

[Aca] I. K $\alpha \lambda \lambda \iota \sigma \sigma o u v \alpha ́ x \eta s$ ( $\varepsilon i \sigma \eta \gamma \eta \tau \eta \dot{n} s$ ), 'Op ${ }^{\circ} \gamma \gamma \rho \alpha-$


[Bai] A. Bailly, Abrégé du dictionnaire grecfrançais, Hachette, Paris, 1901.
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$[\mathrm{C} æ]$ César, Guerre des Gaules, trad. par L.-A. Constans, Les belles lettres, Paris 1984.
[Chi] The Chicago Manual of Style, The University of Chicago Press, Chicago and London, 1982.
[DEK] D. E. Knuth, Computers \& Typesetting, A: The $T_{E}$ Xbook, Addison-Wesley, Reading, 1989.
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[^1]:    ${ }^{1}$ The reader should excuse the unusual order of cases: nominative, genitive, dative, accusative, vocative. This order is used in education and scholarly literature, in Greece.

