





The Problem Solvers' Challenge

April 2023 - Launch Edition

2~Hours Plus $1\!\!/_2$ hour for inputting answers this

PUZZLE BOOKLET

Answer as many of the questions as you can: read the instructions carefully (bold has been added in some cases – do not ignore).

Once you have worked through the puzzles, input your definitive answers into the Answer Booklet provided. It would be useful to take a quick look at all the puzzles before you start working.

Puzzles and points

- A. Gilbertese fruit and flowersB. Shizuoka Japanese
- B. Snizuoka Japanese
- C. To and from Perm
- D. This is Mohawk
- E. Reading Meroitic

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Puzzle A: Gilbertese fruit and flowers

Gilbertese or taetae ni Kiribati is an Austronesian language spoken mainly in Kiribati, with 120,000 native speakers. Kiribati is the former British colony previously called the Gilbert Islands, and the modern name is actually how the word 'Gilbert' is pronounced in this language.

Here are some sentences in Gilbertese with their English translations. Note that *fruit* is singular (i.e. 'a piece of fruit').

A noorii taian uee taian aine. A kunei taian uee taian aine. A na kunei taian uee taian aine. A na kunea te uee taian aomata. E na kunei taian uee te aomata. E nooria te uaa te aomata. E na noorii taian uee te aine. A na kunea te uaa taian aine. The women saw the flowers The women found the flowers The women will find the flowers The men will find the flower The man will find the flowers The man saw the fruit The woman will see the flowers The women will find the fruit

- A1. Translate the following into English:
 - (a) E na noorii taian uee te aine.
 - (b) A kunea te uaa taian aomata.
 - (c) E na nooria te uee te aine
 - (d) E kunei taian uee te aine
- A2. Translate the following into Gilbertese:
 - (a) The woman found the fruits.
 - (b) The women will see the flowers.
 - (c) The man found the fruit.
 - (d) The women will see the flower.

Puzzle B: Shizuoka Japanese

The dialect of Japanese spoken in Shizuoka (an area just down the coast from Tokyo, featuring splendid views of Mount Fuji) has a distinctive way of emphasizing adjectives, as in the following data.

Note that knowledge of standard Japanese will not help in solving this problem. The English meanings are not relevant to the solution of this problem.

| Adjective | meaning | emphatic form | meaning |
|-----------|----------|---------------|---------------|
| hadena | showy | handena | very showy |
| ozoi | terrible | onzoi | very terrible |
| amai | sweet | ammai | very sweet |
| nagai | long | naŋgai | very long |
| shoboi | poor | shomboi | very poor |
| katai | hard | kattai | very hard |

| osoi | slow | ossoi | very slow |
|----------|----------|-----------|---------------|
| takai | high | takkai | very high |
| zonzai | impolite | zoonzai | very impolite |
| kandarui | sluggish | kaandarui | very sluggish |
| suppai | sour | suuppai | very sour |

Pronunciation: The symbol η represents a velar nasal, like the 'n' before a 'g' or 'k' as in 'sing' or 'link'. A doubled letter (consonant or vowel) means that sound is lengthened.

B1. How would the following adjectives be emphasized in Shizuoka Japanese? You do not need to give the English translation.

| (a) <i>kitanai</i> 'dirty' | (b) <i>migamashii</i> 'humble' | (c) <i>okkanai</i> 'scary' |
|----------------------------|-----------------------------------|----------------------------|
| (d) <i>ikai '</i> big' | (e) <i>kibishii '</i> strict' | (f) <i>yasashii</i> 'easy' |
| (g) <i>samui</i> 'cold' | (h) <i>muzukashii</i> 'difficult' | (i) <i>hidoi '</i> awful' |

B2. What are the plain forms of the following emphasized adjectives?

- (a) attarashii 'very new' (b) shimbui 'very rough' (c) kondomoppoi 'very childish'
- (d) hissashii 'very long-standing' (e) aanzenna 'very safe' (f) tannoshii 'very enjoyable'
- (g) dongitsui 'very gaudy' (h) riippana 'very splendid' (i) nikkui 'very hateful'

Puzzle C: To and from Perm

The Permyak language is spoken by around 60,000 people in Perm Krai in the north-eastern part of European Russia. It belongs to the Finno-Ugric language family, along with Finnish, Estonian, and Hungarian.

Below you will find 13 words in Permyak together with their meanings in English.

| Permyak | English | Permyak | English |
|---|---------------------|-------------------------------------|-------------------------|
| k'erkulan' | towards the house | purtəla | for my knife |
| p i zannez i tlən | of your (sg.) desks | t i ez i tkət | with your (sg.) lakes |
| pon i t | your (sg.) dog | k'erkuezlis' | from the houses |
| purtn i s | their knife | jus's'ezə | my swans |
| kəinnez i s | his wolves | kok i skət | with his foot |
| vərələn | of my forest | k'i i tlan' | towards your (sg.) hand |
| jus'nəla | for our swan | | |

Pronunciation: The 'symbol indicates a softened consonant, roughly as if followed by a 'y' (so for example n' is like in 'onion'). Letters so marked should be considered as single consonants. The i and a symbols indicate vowels.

- C1. Translate the following Permyak words into English.
 - (a) pizanislis'
 - (b) vərrezlən
 - (c) kəinnit
 - (d) jus'la
- C2. Translate the following English phrases into Permyak.
 - (a) his hands
 - (b) my knives
 - (c) of your (pl.) feet
 - (d) towards their house

Puzzle D: This is Mohawk

Mohawk is a Native American language spoken in eastern Canada and northern New York State in the USA. It is considered at risk of extinction as only 900 people speak it in Canada and 2,000 in the USA. The language is known by native speakers as Kanien'keha which means 'people of the flint'. The name 'Mohawk' comes from a word meaning 'man-eaters' used by their Algonquian enemies.

Here are some Mohawk sentences with their English translations. **The Mohawk language is** written with some extra symbols to indicate different pronunciations, such as ' and : ... these are not punctuation symbols. Also, conventionally there are no spaces separating different words. When inputting your answers, take care to spell the words accurately.

| Mohawk Wahatiitsiaienta'ne Wahatikwiskwisaienta'ne Hate'sene'otsi'kta Hate'sene'oriien:'a Kaitsiahihwi Kahsahe'tahihwi Kaitsirakvthikvt Kaji:jiarakvthikvt | English They caught a fish. They caught a pig. The louse crawls. My son crawls. The fish spilled. The beans spilled. The fish is white. The flower is white. The white fish |
|--|--|
| Hsahe'taonekwenhtara | Red beans |

- D1. What is the Mohawk word for 'fish'?
- D2. Translate into English hatsi'ktarakvt
- D3. Translate into Mohawk 'The flower is red'
- D4. Translate into English wahatitsi'ktaienta'ne
- D5. If you know that *ien:'a* is 'son', give the Mohawk for 'my'
- D6. If you know that e:rhar is 'dog', translate into English harie:rhararakvthikvt
- D7. Translate into Mohawk 'The dog crawls'
- D8. Translate into Mohawk 'The beans are red'

Puzzle E: Reading Meroitic

The Meroitic script was used to write the Meroitic language from the 3rd century BCE, spoken in the Kingdom of Kush (now northern Sudan and southern Egypt).

Here are two words in Meroitic script, along with their transcriptions, and their English meaning, though in this problem **the meanings shown are for your information, and are not relevant to finding the solution**.

| Meroitic | transliteration | meaning |
|-------------|-----------------|-----------|
| <i>5</i> 52 | ata | bread |
| 1+1252 | apote | messenger |

Here are ten more words in Meroitic script (1-10) and their transcriptions (A-J), but in a different order.

| 3,15x5252 | 1 | А | sema | wife |
|---------------------|----|---|-----------|-----------------|
| JVII | 2 | В | anata | priest |
| <i>₩</i> ₩ <i>₩</i> | 3 | С | pelamosa | general |
| 1 548 3 | 4 | D | qore | ruler |
| 5R52 | 5 | Е | apedemaka | (a warrior god) |
| SωĮβ | 6 | F | sate | mother |
| 317452 | 7 | G | palasana | temple overseer |
| B342 | 8 | Н | paqara | prince |
| 1 5 3 | 9 | Ι | tewiseti | inscription |
| whi | 10 | J | kadite | sister |

E1. Match up the Meroitic words with their corresponding transcriptions.

E2. Transcribe the following Meroitic words.

(a) 1+4~52 (b) 4~52 (c) 51354长 (d) 435×53

E3. SUPPLEMENTARY FUN: How would you write (a) *Mal(a)ta* and (b) *Waleta* (Valletta) in Meroitic?

END OF PAPER