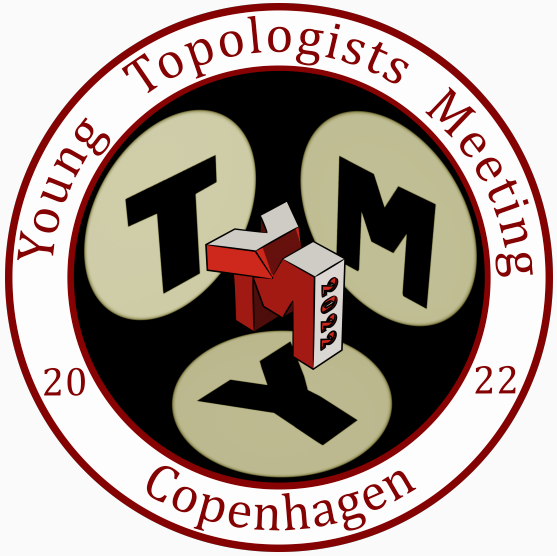
The Game Night

who will get the lowest score?



Young Topologists Meeting

University of Copenhagen

Trivia

Trivial : rules

Live questions, be fast!

- you will be asked questions

Trivial : rules

Live questions, be fast!

- you will be asked questions
- if you know the answer raise your hand

Trivial : rules

Live questions, be fast!

- you will be asked questions
- if you know the answer raise your hand
- if you don't know the answer don't raise your hand

Trivial : rules

Live questions, be fast!

- you will be asked questions
- if you know the answer raise your hand
- if you don't know the answer don't raise your hand

This is just a warm-up. You may recognize questions from previous YTM, thanks to them!

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

Trivia

Trivia

Question 1.

Who introduced the notion of *topological space?*

Trivia

Felix Hausdorff was the first to use the term *topological space* in 1914, Grundzüge der Mengenlehre.

The term *topology* had already been used by Johann Benedict Listing between 1837 and 1847, date where he first used the word in a book.

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

Trivia

Trivia

Question 2.

Which mountains did Grothendieck live close to before his death?

Trivia

Grothendieck was peacefully staying at Lasserre, a little village with about 200 inhabitants in the *Pyrénées*, France.

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

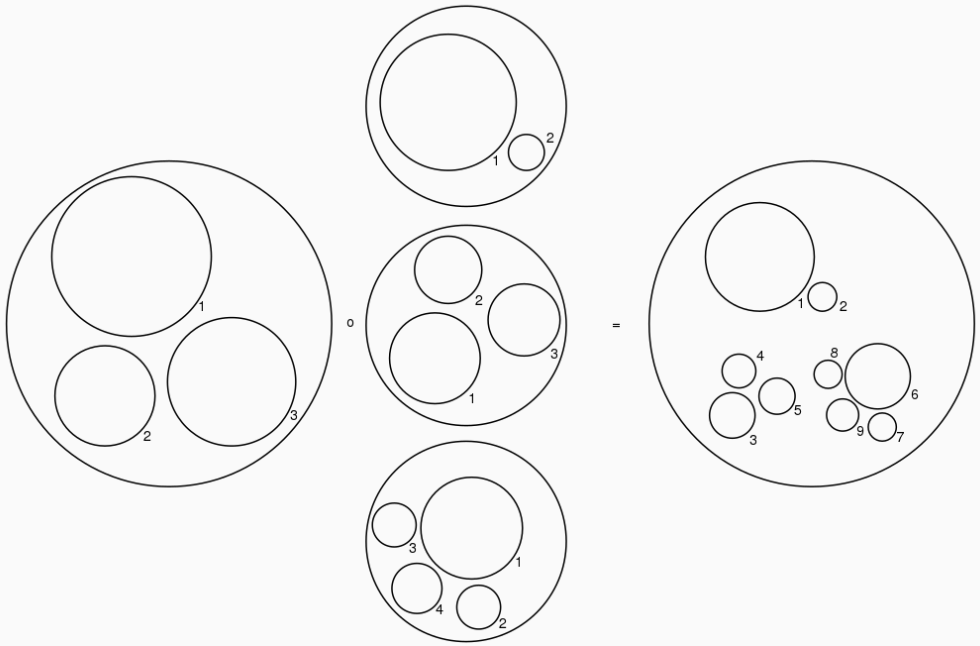
Trivia

Trivia

Question 3.

Peter May spent "a week thinking about nothing else", when trying to coin a name for a certain mathematical object. What is it?

Trivia



Operad

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

Trivia

Trivia

Question 4.

Which topologist has a picture where they are carried by Grothendieck?

Trivia

Michael Atiyah!

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

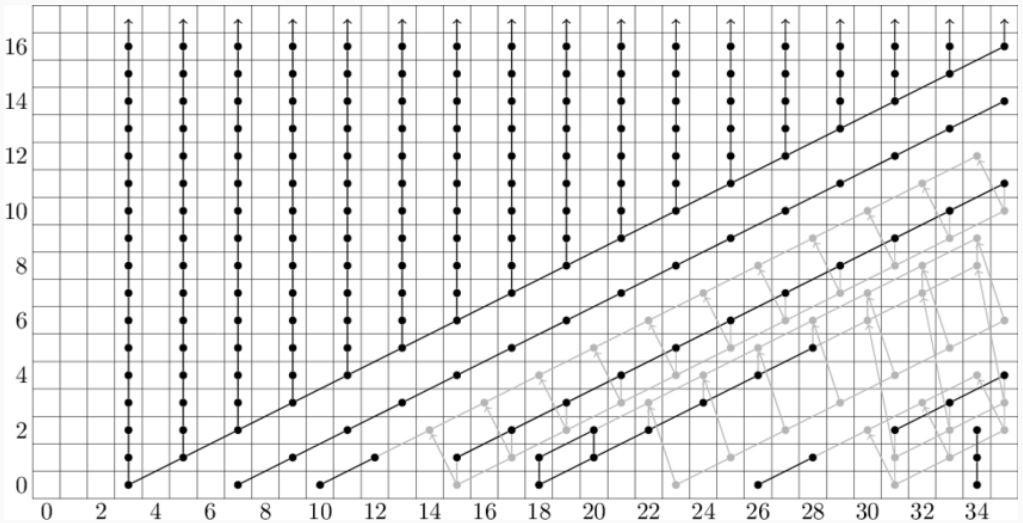
Trivia

Trivia

Question 5.

Which object allegedly "strikes fear into the heart of many hardened mathematicians"?

Trivia



Spectral sequences – This originally comes from lecture notes of Michael Hutchings from 2011, and many notes about spectral sequences quote it.

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

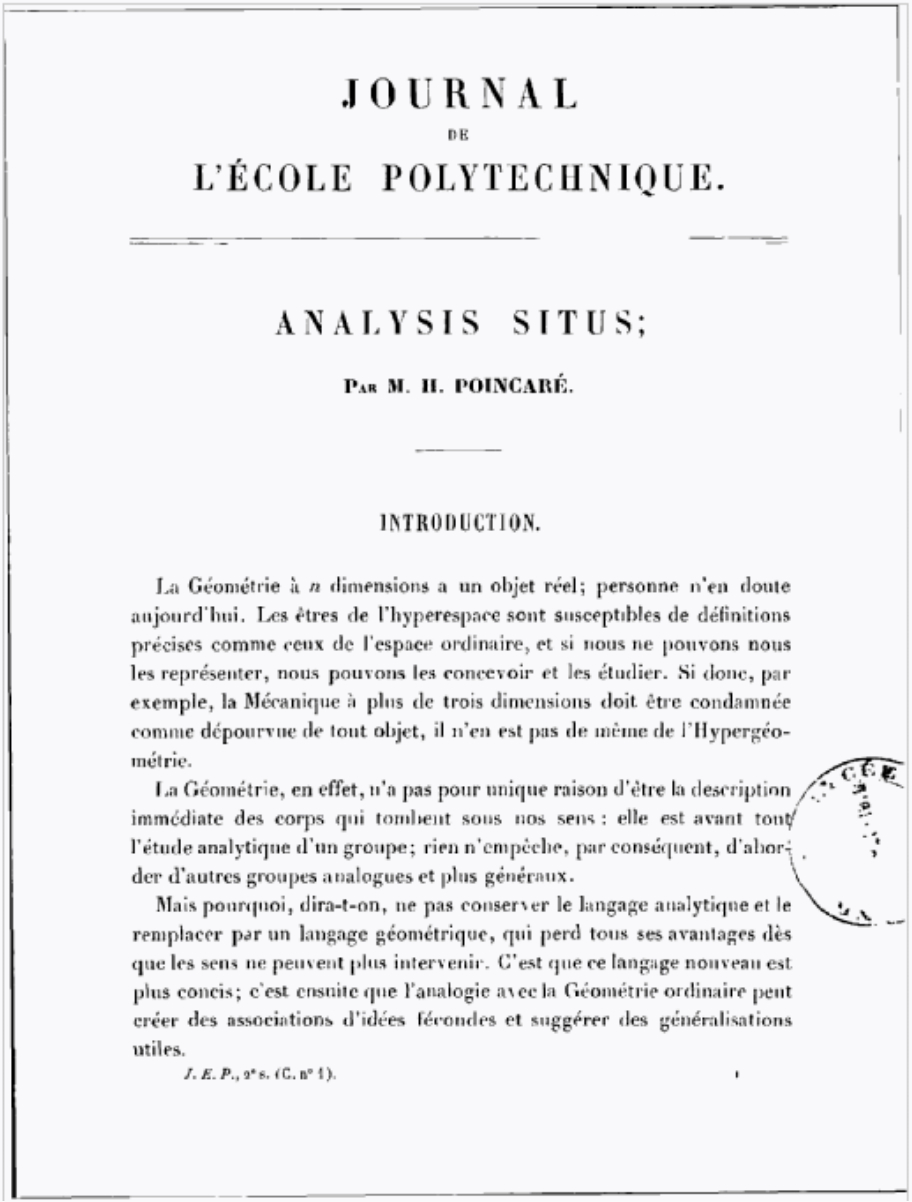
Trivia

Trivia

Question 6.

What name did Poincaré originally give to topology?

Trivia



JOURNAL
DE
L'ÉCOLE POLYTECHNIQUE.

ANALYSIS SITUS;

PAR M. H. POINCARÉ.

INTRODUCTION.

La Géométrie à n dimensions a un objet réel; personne n'en doute aujourd'hui. Les êtres de l'hyperespace sont susceptibles de définitions précises comme ceux de l'espace ordinaire, et si nous ne pouvons nous les représenter, nous pouvons les concevoir et les étudier. Si donc, par exemple, la Mécanique à plus de trois dimensions doit être condamnée comme dépourvue de tout objet, il n'en est pas de même de l'Hypergéométrie.

La Géométrie, en effet, n'a pas pour unique raison d'être la description immédiate des corps qui tombent sous nos sens : elle est avant tout l'étude analytique d'un groupe; rien n'empêche, par conséquent, d'aborder d'autres groupes analogues et plus généraux.

Mais pourquoi, dira-t-on, ne pas conserver le langage analytique et le remplacer par un langage géométrique, qui perd tous ses avantages dès que les sens ne peuvent plus intervenir. C'est que ce langage nouveau est plus concis; c'est ensuite que l'analogie avec la Géométrie ordinaire peut créer des associations d'idées fécondes et suggérer des généralisations utiles.

J. E. P., 2ᵉ s. (C. nº 1).

Analysis situs.

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

Trivia

Trivia

Question 7.

What does the term E_∞ stand for?

Trivia

HOMOTOPY-EVERYTHING H-SPACES

BY J. M. BOARDMAN AND R. M. VOGT

Communicated by F. P. Peterson, May 24, 1968

An *H-space* is a topological space X with basepoint e and a *multiplication* map $m: X^2 = X \times X \to X$ such that e is a homotopy identity element. (We take all maps and homotopies in the based sense. *We use k-topologies throughout* in order to avoid spurious topological difficulties. This gives function spaces a canonical topology.) We call X a *monoid* if m is associative and e is a strict identity.

In the literature there are many kinds of H-space: homotopy-associative, homotopy-commutative, A_∞-spaces [3], etc. In the last case part of the structure consists of higher *coherence* homotopies. In this note we introduce the concept of *homotopy-everything H-space* (*E-space* for short), in which all possible coherence conditions hold. We can also define E-maps (see §4). Our two main theorems are Theorem A, which classifies E-spaces, and Theorem C, which provides familiar examples such as *BPL*. Many of the results are folk theorems. Full details will appear elsewhere.

A space X is called an *infinite loop space* if there is a sequence of spaces X_n and homotopy equivalences $X_n \simeq \Omega X_{n+1}$ for $n \geqq 0$, such that $X = X_0$.

THEOREM A. *A CW-complex X admits an E-space structure with $\pi_0(X)$ a group if and only if it is an infinite loop space. Every E-space X has a "classifying space" BX, which is again an E-space.*

Homotopy everything

Trivia

Are you ready?

Trivia

3

Trivia

2

Trivia

1

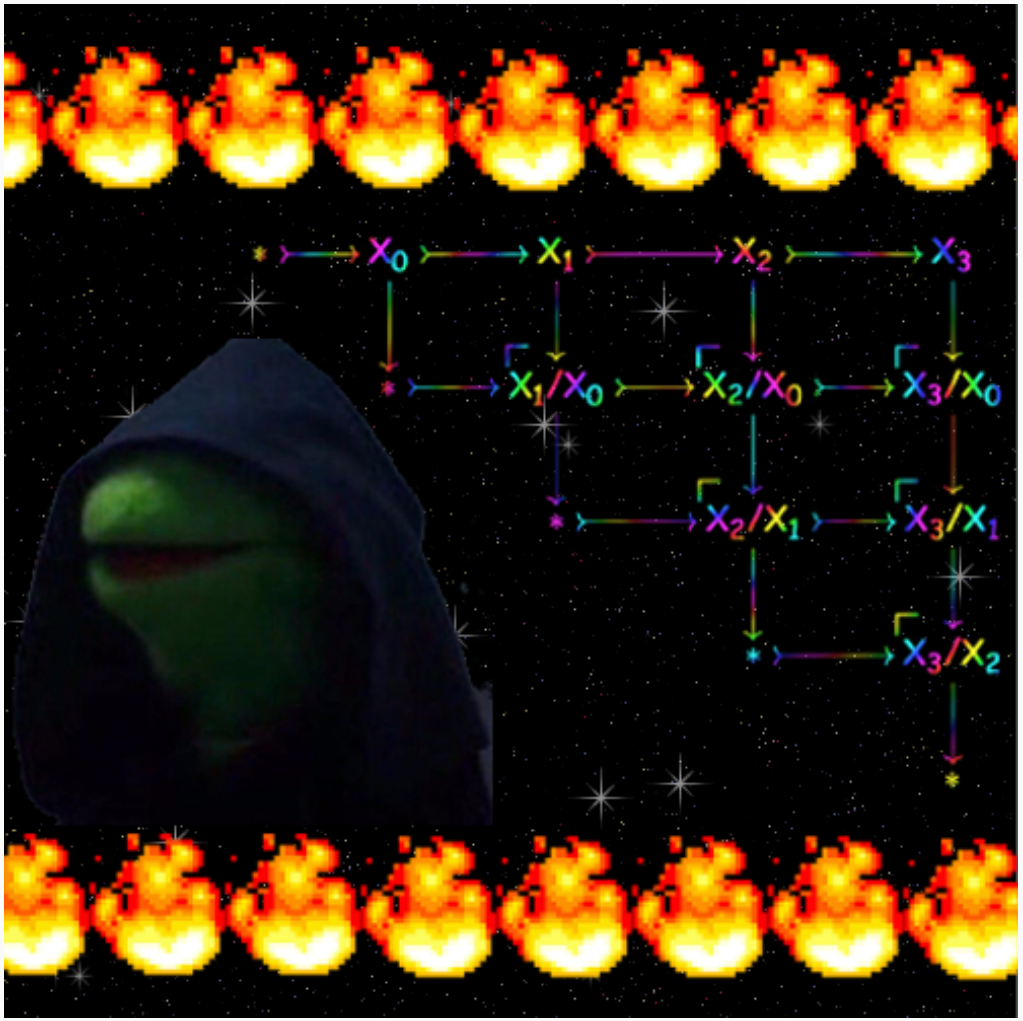
Trivia

Trivia

Question 8.

What is the complete name, “Derived memes for [...]”?

Trivia



Derived memes for spectral schemes.

Let's be competitive now.

Make a team

You now have five minute to make teams of size $n \leq 7$, and to find a name for your team.

Let's be competitive now.

Make a team

You now have five minute to make teams of size $n \leq 7$, and to find a name for your team.

Trick: want to win? Gather with fellow mathematicians from *different* fields than yours.

Let's play?

Ready?

Anagrams

Anagrams : rules

You will have two solve some juicy math-related anagrams.

- take a piece of paper and a pen, and write your team name on it

Anagrams : rules

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- try to find as many as possible!

Anagrams : rules

You will have two solve some juicy math-related anagrams.

- take a piece of paper and a pen, and write your team name on it
- for every solution you find, write its number and your solution
- try to find as many as possible!

This is not a warm-up.

Anagram

Are you ready?

Anagram

3

Anagram

2

Anagram

1

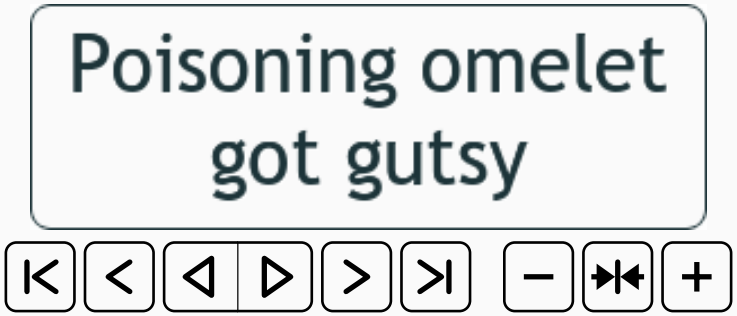
Anagrams

1. Balsamic pesto duel
2. Escargot microbody
3. Poisoning omelet got gutsy
4. Quebec refines
5. Balance license pre-game
6. Mr Ghost, you poop
7. Try Waterloo
8. Chips overtime
9. Heavy pro eigenfunctions
10. Poets caricature survival
11. End mayo meal
12. By, I go at alcohol limits
13. I smile at clips
14. I loop Thom comity

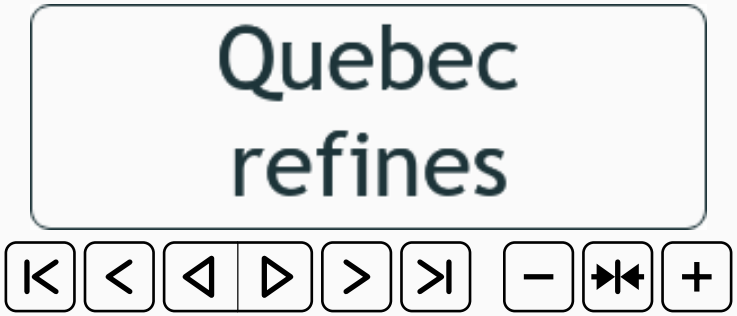
Solutions

Solutions

Solutions

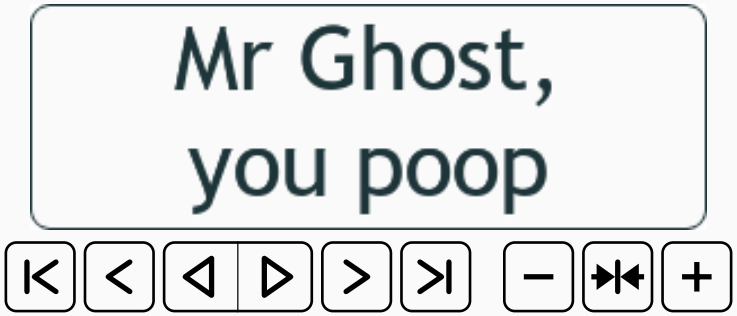


Solutions



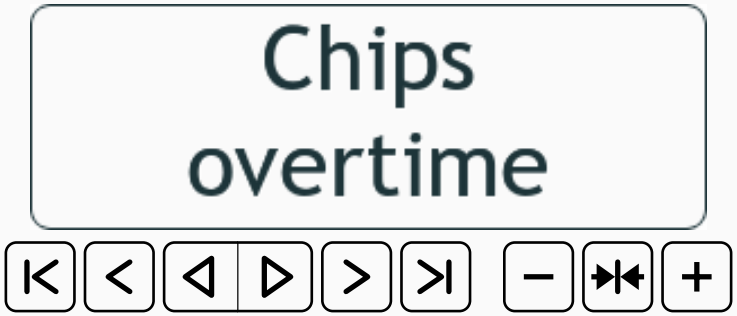
Solutions

Solutions

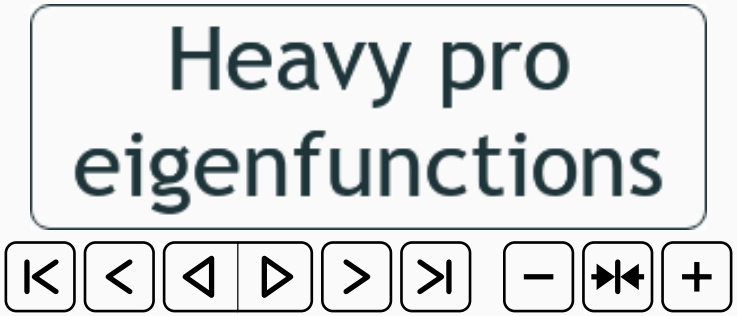


Solutions

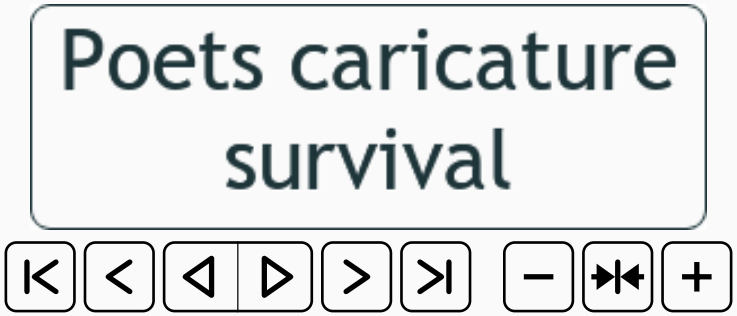
Solutions



Solutions



Solutions



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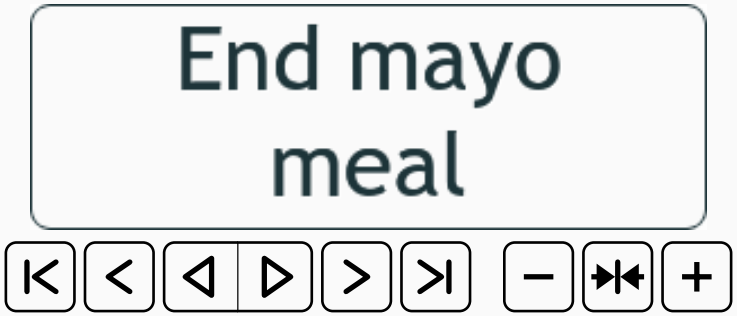
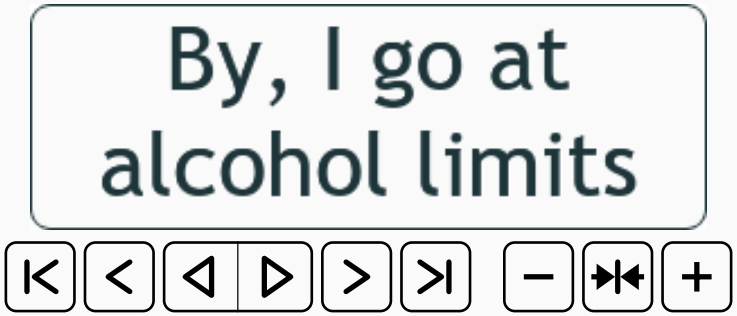
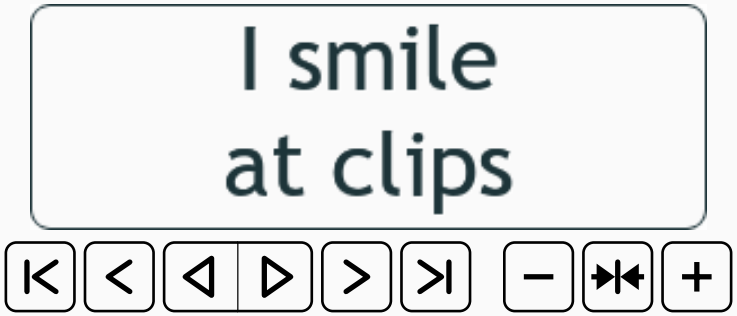


Solutions



Solutions



Solutions

Estimathon