

School protocol 2026/2027

Schulprotokol 2026/2027

Notes & Reference

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Legally binding upperclasswomen agreement

- Fehlzeitenheft must be carried at all times
 - Upon absence, note a reason and (if applies) a doctor's note

- ▶ Have the teacher responsible for the missed period sign at the earliest convenience
 - ▶ **All** absences from school **must** be noted here
 - ▶ Provide a signature from your parents (if you're underage)
 - ▶ Unexcused absences can lead to **failing courses and being expelled from the upper grades**
 - ▶ **All** teachers responsible for periods you've missed must be handed the appropriate excuse **separately**
 - If a student were to miss school for any reason, the school must be informed before 7:30 on the same day via phone or the school's homepage E-mail form
 - ▶ Note the first period on the missed day
 - ▶ School secretary phone number: 04321 - 9424260
 - ▶ If you need to leave early, **personally sign out at the secretary's office**
 - ▶ **You must sign in when first appearing to school after absence, at the very latest**
 - ▶ If you were to miss an exam more than twice, or are absent during mandatory attendance times, a doctor's notice **must** be provided
 - In case you miss an exam, the teacher **must be contacted as soon as possible, ideally via E-mail** to request the next available appointment for a repeat exam
-

Points-to-Grade Reference

Excellent 13-15

Good 10-12

Satisfactory 7-9

Sufficient 4-6

Failed 1-3

Insufficient 0

Teacher name reference

Mey Meike Meyer

Gt Manuel Glanert

Bt Johanna Bartels

Gs Oliver Gerriets

Sn (Yannick) Schneider

Kg Danica Kröger

Fes Hennes Feser

Gc Milagros, Garcia Fernandez

Pr Inge Pries

Asm Laura Asmus2

Sz Sven Schwanitz

Grading criteria reference

- 1) Contributions to class (quantity & quality)
 - 2) Homework
 - 3) Correction of exams and return of exam-books
 - 4) Material completeness (Worksheets, files/folders, books, texts)
 - 5) Tests (vocabulary, grammar)
 - 6) Quiet, concentrated work (alone or in groups)
 - 7) Motivation/Interest
 - 8) Engagement/Enthusiasm
 - 9) Attentiveness
 - 10) Punctuality
-

Expectation levels

Level 1 Reproduction of information → Summarize/Re-tell a text

Level 2 Reorganization and transfer → Explain the structure of a text

Level 3 Reflection and critical thinking → Use a text for judgment and problem solving

Operator Reference

Erläutere Explain something using arguments; Remember to back them up

Gib an Return the request value, with no additional content

INF

2026-08-18

- Received nameplate
- Weird name matching game:

- Get random guys' nametag
 - Bring it to them
 - Get their nametag back
 - Return to your seats

None of it was explained, don't ask me.

- Mr. Schneider certified Bullshit Bingo™
- Most of the course is male lol
- Except me and (what i assume to be) the only other trans person in this godforsaken school
- Teacher made the horrible mistake of giving the students responsibility (uh oh)
- "Informatik ist 'ne "Du'ts Branche"
- Arguing about the price of various goods from the bistro (i guess?)
- "Don't deal single-use vapes with the 5th graders!"
- Big fat legally binding letter to ~~sign away your soul~~ take responsibility
- Omg we're allowed to leave school premises if our parents agree! Yay!
- Philosophy taught by ASM yeyah

Base conversion

Convert binary-to-decimal:

For each 1, do $\text{accum} += \text{power_at}(\text{index_of}(1))$, result is decimal

Convert decimal-to-binary:

Find highest 2^x where $\text{decimal} < 2^x$, then do $\text{decimal} -= 2^x$, then do $\text{accum} += 2^x$, until $\text{decimal} = 0$

BINARY

- + Computers can use it
- Long
- Only whole numbers

DECIMAL

- + Intuitive to humans (10 fingers)
- + Concise

HEXADECIMAL

16 digits: 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F

- + The best of both worlds
- + Concise way to portray bits
- Unintuitive with a mixture of standard decimal and letters

Character encoding

Characters, as all other data a computer deals with, is binary. As such, letters must also be encoded as binary data.

Popular encoding standards

- ASCII
- ISO 8859-1 (Windows Codepage 1252/ANSI)/Latin 1
- Unicode

UTF-8

If a bit sequence (starting at the first bit of a byte) of the following types is found, the appropriate encoding will be chosen for the remaining n bytes.

0b0 → ASCII

0b110 → 2-byte

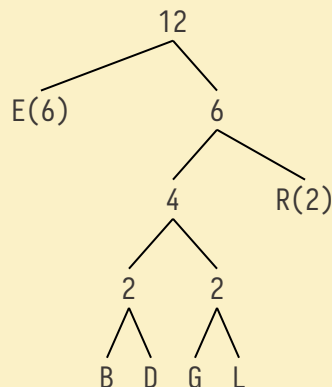
0b1110 → 3-byte

0b11110 → 4-byte

Any trailing byte that is not the first byte in the sequence must then carry 0b10 as the leading bits. The following is the encoding for the “**ᄇ**” character:

0xE2 0x98 0xAD — 0b1110-0010 0b1001-1000 0b1010-1101

Huffman trees



School Function

2026-08-17

- Autumn holidays start on 2026-10-10
- Phones may be used at any time while in AM building
- “Tutor” equivalent to “Class teacher”
- This could have been an E-mail
- Stage technicians did a shitty job, the Win11 box they used to show the pdf was constantly going to sleep, plus the speakers were constantly buzzing

ART

- I think they want to restore the destroyed globe out front the main building
- Half the people on the list for the course aren't present, even though a lot of people are here (list is probably wrong)
- Some assistant teacher guy is present and doing half the lesson, never seen him before

New topic: Romuald Hazoume

- Born 1962-02-07, in Benin, West Africa
- Renowned for his masks made of gas cans and other waste products
- Also creates larger installations
- Takes inspiration from local myths and traditions
- Multiple originals currently in possession by the Gerisch-Foundation, as well as in our classroom today¹
- Global debut in 2007 at "documenta 12, 2007" with a large ship made of gas cans
- **Theme: Art out of waste products**
- **Topic: Human heads, bodily features and masks**
- Proportions of the human head with references to European art history

Tasks:

- Collect "civil trash", everyday waste
- Combine it with screws and rivets (rivets??)
- Create a mask in dual-work (one partner)

- No one is taking the art seriously
- The assistant teacher guy isn't helping by constantly extenuating that its "Serious art!! This costs 30.000€!!"
- One guy thought that "narcissism" was "nazism" and called out "adolf hitler?" when asked for an example of one

Glossary

Word	Definition
Ethnological	related to an ethnicity
Collage	compilation (or "sticking together") of media to form an art piece
Installation	(in the context of art): larger, static artistic structure
Classic Modern Period	TODO: Ask what this means

Word	Definition
Sculpture	A three-dimensional work of art made of one or more materials which was sculpted, assembled, found, constructed or created using one or more technique
abstract	Something that concentrates in itself the qualities of a larger item, or multiple items
Cubism	Early-20th-century avant-garde art movement, originating in Paris, focuses on cubes and geometric shapes with hard angles

SPA

Disclaimer

!!! WARNING !!!

Reading past this point may induce any of the following symptoms:

- Nausea
- Vomiting
- Severe depression
- Disdain for humanity at large
- Aggression

...among others.

STAY CLEAR IF YOU HAVE NOT BEEN PREPARED TO ENGAGE WITH ROMANCE LANGUAGES. ZHS DOES NOT PROVIDE WARRANTY FOR ANY HARM DONE BY EMBEDDED COGNITO HAZARDS.

Required materials

- ISBN: 978-3-06-123166-8

Spanish numerals:

(cero) uno	one
dos	two
tres	three
cuatro	four
cinco	five
seis	six
siete	seven
ocho	eight
nueve	nine
diez	ten
quince	fifteen

Vocabulary

Common phrases

Me llamo...	I am...
Soy de...	I am from...
Tengo... años	I am... years old
Vale	Affirmative/Okay
en alemán	in German
se dice	It is said
¡Adiós!	Bye!
¡Animo!	Cheer up!
¡Buenas!	casual greeting
¡Buenos días!	Good morning/day!
¡Buenos noches!	Good evening!/Good night!
¡Buenos tardes!	Good day!/Good evening!
¡Hasta la próxima!	Until next time!
¡Hasta luego!	See you later!
¡Hasta pronto!	See you soon!
¡Hola!	Hello!
¿Cuál es tu número de teléfono?	What's your phone number?
¿Cuántos años tienes?	How old are you?
¿Cómo estáis?	How are you? (formal)
¿Cómo están ustedes?	How are you? (formal)
¿Cómo estás?	How are you?
¿Cómo te llamas?	What's your name?
¿Cómo...?	What...?
¿De dónde eres?	Where do you come from?
¿Dónde...?	Where...?
¿Qué tal?	What's up?
saludar	begrüßen
¿Qué significa...?	What does this mean?

Common words

(el) acento	(the) accent
(el) amigo/(la) amiga	(the) friend
(el) apellido	(the) last name
(el) bar	(the) bar/pub
(el) beso	(the) kiss
(el) chico	(the) boy
(el) correo electrónico	(the) E-mail
(el) diálogo	(the) dialogue/conversation
(el) estadio	(the) (football) arena
(el) guion bajo	(the) underscore
(el) guion	(the) hyphen
(el) metro	(the) metro
(el) museo	(the) museum
(el) móvil	(the) phone

(el) nombre	(the) name
(el) número de teléfono	(the) telephone number
(el) parque	(the) park
(el) problema	(the) problem
(el) profesor/(la) profesora	(the) teacher
(el) punto	(the) point
(el) restaurante	(the) restaurant
(el) simbolo	(the) symbol
(el) teléfono	(the) telephone
(el/la) estudiante	(the) student
(la) arroba	(the) at-symbol (@)
(la) calle	(the) street
(la) capital	(the) capital
(la) chica	(the) girl
(la) dirección	(the) address
(la) foto	(the) photo
(la) guitarra	(the) guitar
(la) plaza	(the) plaza
(la) tapa	(the) Tapa
Bueno...	So then...
Gracias	Thanks
Soy...	I am...
asi asi	somewhat
bien	good
con dos puntos	with Umlaut
con	with
de	from, out of
dia	day
el español	spanish
en	in/on/next to
es	is
fatal	(very) bad
genial	excellent/correct/good
hermano	brother/sibling, (colloquial)
mal	bad
mi	my/mine
mucho estrés	much stress
muy	very
necesitar	(to) need
o	or
pero	but
pues	So...
se escribe	it is written/will
señor	Mr.
señora	Ms.
si	yes

también also
 terminar (to) end
 trabajar (to) work
 tú you
 usted, ustedes formal pronoun
 va con smth. belongs to
 vives (you) live
 vivo (i) live
 y and
 yo me

Verbs

charlar chat
 quedar (ending up to) be (something)
 tomar ingest

Adjectives

euskera Basque (language)

Nouns

cerveza beer
 jardín garden
 pequeño klein
 carretera Landstraße
 (el) pueblo ... town, village; the common people, working class; population, people; nation
 (el) país country
 (la) persona person
 (la) canción song
 (el/la) belga Belgian
 (la) fecha Date
 (la) control test
 (el) vocabulario vocabulary

Existence (of self)

Person	Pronoun			Compound		
Infinitive	ser					
Singular	Masculine	Feminine	Formal	Masculine	Feminine	Formal
1st	yo			soy		
2nd	tú			eres		
3rd	él	ella	usted	es		
Plural	Masculine	Feminine	Formal	Masculine	Feminine	Formal
1st	nosotros	nosotras		sois		
2nd	vosotros	vosotras		somos		
3rd	ellos	ellas	ustedes	son		

Conjugations

Person	ar	er	ir
Singular			
1st	hablo	como	vivo
2nd	hablas	comes	vives
3rd	habla	come	vive
Plural			
1st	hablamos	comemos	vivimos
2nd	habláis	coméis	vivís
3rd	hablan	comen	viven

Quantities

With words ending on a vowel:

(la) empresa → *Singular* (la) empresas → *Plural*

Words ending on a consonant, an extra 'e' is appended:

(el) hotel → *Singular* (el) hoteles → *Plural*

example-word-here: singular

example-word-herees: plural

Questioning

Format: ¿{operator}{content}?

Who? Quién?

What? Qué?

Articles

	The undefined article		The defined article	
	Masculine	Feminine	Masculine	Feminine
Singular	un chico	una chica	el chico	la chica
Plural	unos chicos	unas chicas	los chicas	las chicas

If a word does not end on a vowel, the plural of it will insert a vowel between the singular and the '-s':

unos jardine <u>s</u>

HIST

Required materials

- ISBN: 9783661320212

New topic: What even is history?

“Geschichte ist eine Dokumentation der Vergangenheit” – Lilli Konstanze Blendzki

History is...

...based? Based on what? Sources!

...lost history once every record of it has been lost

...never objective; historians can only ever document from their point-of-view

...a condensed record of important events from the past

...not very reliable

...needed?



Is history still needed?

1. History may answer to our questions

Sometimes, contemporary issues are very closely related to similar issues from the past. Ignoring the way those issues were solved or, rather, *not* solved is the fastest way to making the same mistakes again. History lets us learn from our mistakes, and forgetting about them will only lead to history repeating itself.

2. History repeats itself

Education about history combats misconceptions among the public and helps prevent the more gullible sort to play into the hands of malicious actors exploiting their lack of education. Through knowing how the population is serially exploited, the population may avoid such a thing happening again. It's no use retrying a failed approach to politics again without making amends to the issues faced in the past.

3. History is hard; and that's a good thing

History is a complex and broad topic, the understanding of which drastically improves the reasoning capabilities of those who wish to understand it. Knowing how to process and connect vast amounts of knowledge trains your brain to be more adept at all other important language/data processing tasks. If you happen to be stuck in a rut of anti-intellectualism, try looking into some local or international history!

Remarks:

- We would've been better off with an old, analogue chalkboard, this promethean garbage is slower than the school WiFi
- I really need to look into some proper history, i don't know *anything*

Glossary

Word	Definition
Primary source	Information which originates from the time and party which it is about.

Word	Definition
Secondary source	Information from a party or time differing from the party and time the information is about.

Method: Writing about a historical event



Formal analysis

- Name: Author, Title of the source, Type/Grade of source, Publication date/location, Target demographic, Topic, Intention of the author (optionally later in the text)

Content analysis

- Summarize the contents of the source
- Use relevant citations & quotes

Contextual analysis

- Explain relations of the source to other historical events in the given time period (use core terms related to the topic)
- Mention important context

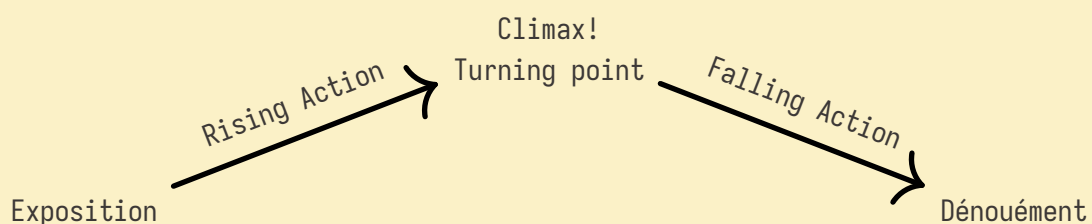
Judgmental conclusion

- Make a conclusion relevant to the topic of the task
- Formulate a working hypothesis (if useful)
- Gather arguments (with respect to the source)
- Formulate a judgment of the event in the context of a then-current perspective and a now-current perspective

ENG

Elements of a story

- Characters (actors partaking in the story)
- Setting (time & place)
- Theme (central idea)
- Plot (series of events)



7 Elements of story writing

- (1) **Plot** - build a sequence of events that is straightforward but also able to surprise the reader with twists
- (2) **Characters** - create complex and relatable character types and traits
- (3) **Setting** - tell the reader where and when your story is taking place
- (4) **Conflict** - decide where the interests of the protagonist and antagonist will collide
- (5) **Theme** - sprinkle your story's "big idea" or underlying message about life into the details
- (6) **Point of view** - pick who is telling your story
- (7) **Tone** - establish a general feeling for the story with vivid word choice

Newspaper writing

New topic: Newspaper writing

- Get the attention of the reader
- Be precise

"You need to keep the attention of the reader by making the article *tense* and *exciting*. Otherwise, you wouldn't keep reading; it's just logical!"

"The choice of words should really attract the attention of the reader"

I'm gonna krill myshelf i'm gonna krill myself i'm gonna krill myself i'm gonna krill myself i'm gonna krill myself i'm gonna krill myself i'm gonna krill myself i'm gonna krill myself

This is the death of journalism.

WIPO

- Economics internship March 2027
 - ▶ Observer role, **not** practice job
 - ▶ Submit result in video format (make it *aesthetically pleasing*)
 - ▶ 1 week (head teacher didn't wanna budge)
 - "Halt ich für fast nicht leistbar, geben Sie ihr bestes" - teacher
 - ▶ Unpaid! Yay!
 - ▶ Make *Leitfrage*: Ooohoh university expectations oooo00oo000
 - ▶ If you didn't get a spot, submit proof of all the sent applications
 - ▶ Start sending applications NOW. Find them here: <https://praktikumsh.de/>
- Got papers (4):
 - ▶ "Info" sheet contains useful information for the internship (Keep for later)
 - ▶ "Parents" sheet is a letter regarding the internship address to parents (Send to parents)
 - ▶ "Form" is where data relating your intern position in the company goes (Return to teacher)
 - ▶ Unmarked (company) is informational for the company (Send to company)
 - ▶ Prime directive: *Lebenslauf*, *Anschreiben*, pray they have low standards

Rules in the WiPo course

Respect

- Listen to another
- Let each other finish
- Exchange opinions on the subject
- Separate the argument from the argumentee

Reliability

- Arrive on time
- Have homework done
- Carry your materials

— Bozo switched slides too early —

Glossary

Word	Definition
Demokratie	
Fraktion	
Koalition	
Konsumentenrente	
Rezession	A period of reduced economic activity
Teilzeitquote	Anteil aller erwerbstätigen Menschen, die weniger Stunden als eine Vollzeitkraft (in der Regel 40 Stunden/Woche) arbeiten.
Gini-Koeffizient	Statistisches Maß, das die Ungleichheit von Einkommen, Vermögen u.a. in einer Gesellschaft zeigt.

Demografie
Fraktion
Koalition
Konsumentenrente
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TODO: Fill in definitions

Topic: Inequality in the workplace

Statistics show that:

- Part-time work is on the rise
- Women do significantly more part-time work than men

This indicates that:

- Women have less time to work (→ more unpaid labor)
 - Women are often expected to do a disproportionate amount of housework

- The economical situation is worsening (requires more work)
 - Rising costs with stagnating wages force the population to start more “side hustles”

This is already a lot better than it was before.

History of gender-based inequality in germany:

- <1918: Husbands have the final say about their wives actions
- 1918: Active/passive voting rights for women
- 1949: Equality of women’s rights in german basic law
- 1957: Effective equality of women’s rights in germany
- 1976: Abolishment of the law mandated housewife-culture
- 1980: Workplace equality law instated in germany
- 1994: Second (reworked) equality law for women in germany (→ punishments for workplace inequality)
- 1997: Domestic rape is made illegal in german law
- 2015: Government enforced “Frauenquote” (→ positive discrimination for women in the workplace)

2026 federal vote in Saxony-stop (yes im calling it that)

- AfD at 44%
- Any party must pass 5% mark to be let into the parliament
- BSW refuses to form a coalition with AfD
- AfD is celebrating their victory like a boxing match lmao (they got balloons)
- Verfassungsschutz still subject to current government and therefore biased, AfD voters argue

Germany’s protection of vital infrastructure is lacking

- Completely unprotected grid infrastructure
- Lackluster cybersecurity

PHYS

I'm so gonna krill myself. I went to the *wrong* physics course! Welp, this is the right one now, so... here we go.

Method: Calculating

When doing calculations, always follow the following scheme:

English form

```
Let: {known var 1}; {known var 2}; ...
In: {var 1} in {unit 1}, {unit 2}, {unit 3}; {var 2} in {unit 1}; ...

Formula: {formula(s) used for calculations}; ...

Calculation:

for {var 1} in {unit 1}: {calculation}
for {var 1} in {unit 2}: {calculation}
for {var 1} in {unit 3}: {calculation}

for {var 2} in {unit 1}: {calculation}
```

German form

```
geg.: {known var 1}; {known var 2}; ...
ges.: {var 1} in {unit 1}, {unit 2}, {unit 3}; {var 2} in {unit 1}; ...

Ansatz/Formel: {formula(s)}; ...

Rechnung:

für {var 1} in {unit 1}: {calculation}
für {var 1} in {unit 2}: {calculation}
für {var 1} in {unit 3}: {calculation}

für {var 2} in {unit 1}: {calculation}
```

Topic: Kinematics

Movement is the change in position relative to a given reference system.

1. Constant Motion

Time-Distance-Law: $s = v * t$

2. Accelerating Motion

Time-Distance-Law: $s = \frac{1}{2}a * t^2$

Time-Speed-Law: $v = a * t$

Value	Symbol	German Symbol	Unit
Time	t	t	sec
Distance	$\vec{d}$	$\vec{s}$	m
Velocity	$\vec{v}$	$\vec{v}$	m/s
Acceleration	a	a	m/s ²

Time and **acceleration** are scalars, single values multiplied by their units.
Distance and **velocity** take direction into account, and are therefore vectors.

Constantly accelerating motion

Experiment: Free fall

Material: Coin (or other object), Measuring tape, Tablet/Phone/Laptop w/ Viana 2

Execution:

1. Lift coin
2. Drop coin
3. Record & Analyze coin with Viana

Result:

<Just imagine an exponential plot here>

Curve: Parabola → Acceleration equation is a **quadratic function**

Explanation: The body is accelerated through F_g : **gravity**.

Formula for an accelerating body

If the speed of a body changes, it is experiencing an *accelerating motion*. The acceleration a is the quotient of the change in speed Δv and the associated duration Δt :

$$a = \frac{\Delta v}{\Delta t} = \frac{v_2 - v_1}{t_2 - t_1}$$

The unit for acceleration is: $1 \frac{m}{s^2}$.

MATH

Number classes

- N = natural = 0, 1, 2, ...
- Z = integers = ..., -2, -1, 0, 1, 2, ...
- Q = fractions = Z/Z (technically Z/N because you could cancel out two minuses → only positive denominators required)
- R = reals = everything between negative and positive infinity (i.e. shit you can't just express in fractions, like pi or sqrt(2))
- C = complex = a completely new dimension aka number line with base i instead of 1

All classes expressed contain the class above them.

Linear equations

Base equation

$mx + n = y$ where

m = slope (rise / run)

n = offset (y at x = 0)

x = x component of point vector 1 & 2

y = y component of point vector 1 & 2

a

Tools to solve for linear function crossing two pointvectors

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$n = y_1 - (m \cdot x_1)$$

Polynomials

Terms

Term	Definition
Polynomial	A function of signature $f(x)$ whose body is a sum of subterms
Subterm (of a polynomial)	A component of a polynomial function following the scheme ax^b
Grade (of a subterm)	The exponent b of a subterm
Maximum grade (of a polynomial)	The largest exponent of all exponents of all subterms of a polynomial
Minimum grade (of a polynomial)	The smallest exponent of all exponents of all subterms of a polynomial
Grade (of a polynomial)	Synonym for the maximum grade (of a polynomial)
Root (of a polynomial)	Any point in the set of all points of a polynomial where $f(x) = 0$

Term	Definition
Extremum	Any point where the sign of the delta of y between the current and next x is inverse to the sign of the delta of y between the current and last x (roots in the derivative of the polynomial)

PQ-Formula

Helps find roots in second-grade polynomials.

$$\frac{p}{2} \pm \sqrt{\left(\frac{p}{2}\right)^2 + q}$$

$$-\left(\frac{p}{2}\right) + -\sqrt{\frac{p^2}{4} - q} \quad f(x) = x - x_1$$

$$(x - 4) \cdot (x - 2) \quad x * x + x * -2 - 4 * x - 4 * -2 \quad x^2 - 6x + 8$$

$$-\left(-\frac{6}{2}\right) + -\sqrt{\frac{6^2}{4} - 8} \quad 3 + -1$$

$$x_1 = 4 \quad x_2 = 2$$

$$f(4) = 4^2 - 6 \cdot 4 + 8 \quad f(4) = 16 - 24 + 8 \quad f(4) = 0$$

$$f(2) = 2^2 - 6 \cdot 2 + 8 \quad f(2) = 4 - 12 + 8 \quad f(2) = 0$$

Log/Root

$$a^b$$

The root function is used when the exponent is known, but the base is not. The log function is used when the base is known, but the exponent is not.

$$4^2 = 16 \quad \sqrt{16} = 4$$

$$\sqrt[b]{a^b} = a \quad \log(a, a^b) = b$$

$$\ln(x) = \log(e, x) \quad \log(a, x) = \frac{\ln(x)}{\ln(a)}$$

$$\ln(a) + \ln(b) = \ln(a \cdot b) \quad \ln(a) - \ln(b) = \ln\left(\frac{a}{b}\right)$$

Exponents

Real number exponents

Same basis:

- $a^r * a^s = a^{r+s}$
- $\frac{a^r}{a^s} = a^{r-s}$
- $(a^r)^s = a^{r*s}$

Same exponent:

- $a^r * b^r = (a * b)^r$
- $\frac{a^r}{b^r} = \left(\frac{a}{b}\right)^r$

Roots with exponents

$$\text{nth-root}(x) = x^{\frac{1}{n}} \quad \frac{1}{x^a} = x^{-a}$$

Exponential Growth

An exponential function is a function that grows by $a * q^n$: $B(n) = a * q^n$. $B(0) = a$ hereby being the initial value, and “q” being the growth factor.

The x-value of an exponential can be found by applying the logarithm with respect to the base to the desired y-value. i.e.: $f(x) = 1.5^x = 5$, $x = \log(5, 1.5)$

Functions

Symmetry

Since x^n is equivalent to repeated application of division with x , a negative value for x leads to flipping of the sign, where if n is even and $x < 0$, $f(x) < 0$. If n is odd and $x < 0$, $f(x) > 0$.

$$f(x) = x^2 = x \cdot x \quad f(-x) = (-x)^2 = x^2 \quad g(-x) = (-x)^3 = (-x)(-x)(-x) = -x^3$$

Extremes

Glossary

High point Point vector at a local/global maximum

Low point Point vector at a local/global minimum

Local maximum Highest point within any region

Global maximum Highest point on the graph

Local minimum Lowest point within any region

Global minimum Lowest point on the graph

Get extremes

Any point where $f'(x) = 0$ is an extreme.

As long as a function is not shifted, it always has one less extreme than it has roots.

Slopes

A slope may be obtained by taking the difference between the components of two point vectors over another:

$m = \frac{y_1 - y_2}{x_1 - x_2}$ where m is the slope and $(x_1|y_1), (x_2|y_2)$ are two points on the function between which you desire to obtain the slope.

Note: Slopes do not necessarily represent the actual function progression. The function may have unexpected patterns between the two points; all that the slope guarantees is the angle between one point vector and another.

GEO

Topic: The anthropocene

Physical and human geographical systems and its interactions between society and space

The anthropocene describes the increasing influence of man on the environment. The resulting changes within the last 200-300 years are not only visible on a local level, but also on a global scale. Since the industrial revolution human sprawl has become detrimental to the biosphere of earth.

The most important of these human-induced changes is climate change and the increase of atmospheric greenhouse gases.

Consequences of human activity

- Climate change
- The antarctic ozone hole
- Dwindling fish populations
- Excessive human land use

Endangered Geiranger

Issue:

Landslides from the Mt. Åkne is threatening the local population. Sediment impacting the rocks on such a massive scale will be followed by large waves and subsequent floods.

Preparation:

During:

After:

TOOD: Fill in

GERM

Topic: Fiction, at the example of traveling

- We read Janosch
- Woaw
- School mandated age regression

Features of a story about a journey

- Yearning of the protagonists, excitement → Feeling of something missing
- Curiosity
- Encounters with strangers → Friendships, foreign perspectives
- Breaking free from daily life
- Journey changes protagonists

Typical progression: Embarkation → Journey → Return

Topic: The odyssey

The greek alphabet

TODO: Copy tables from "the greek alphabet" paper

Progression

Reisestation	Geschehen	Charakter Odysseus'
Lotophagen	TODO: Fill in	vorsichtig, durchsetzungsstark
Zyklopen	• Polyphem hält Odysseus in Höhle gefangen • Odysseus blendet ihn mit brennendem Pfahl und entkommt	mutig, brutal, einfallsreich
Kirke	• Zauberin verwandelt Männer in Schweine, Odysseus ist immun gegen Zaubersrank	loyal, entschlossen, stolz, etwas besonderes
Sirenen	• Odysseus lässt sich an den Mast binden, um den Gesang der Sirenen zu widerstehen	neugierig, fürsorglich
Skylla & Charybdis	• Odysseus "opfert" sechs Männer dem Seeungeheuer um eine größere Opferzahl bei Charybdis zu verhindern	berechnend, strategisch, "eiskalt", nicht immer siegreich, ambivalent
Kalypso	•	Heimatliebe, Treue zu seiner Frau

Addendum: Punctuation

Infinitive-Sentences

...are sentences which contain at least a "zu" and another word.

Examples: "um zu", "ohne zu", "anstatt zu", "außer/als zu"