

**GERMAN-ENGLISH
MATHEMATICS
DICTIONARY**

GERMAN-ENGLISH MATHEMATICS DICTIONARY

COMPILED AND EDITED BY

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PREFACE

Rapid development in any scientific field is almost invariably accompanied by a parallel development in language. Since the advancement of human knowledge in many fields is today truly an international endeavor, there exists an ever-increasing need for up-to-date multilingual scientific dictionaries.

Recent advances in such fields as astrophysics and automation have again emphasized the importance of the study of mathematics, a study in which reference to German books and periodicals remains of great importance. It may therefore be assumed that workers in many fields, as well as students and teachers, will find this "German-English Dictionary of Mathematics" a valuable tool by reason of its listing of newly coined expressions and of the varied meanings of the same term according to different applications. For the same reasons, translators will find it a safe guide in the choice of precise terms.

The author, Charles J. Hyman, after studying at Columbia and Fordham universities and at the Brooklyn Polytechnic Institute, was a professor of mathematics at the University of the Philippines and a civil engineer in the service of the U.S. Coast and Geodetic Survey. Later he was active as a translator of books on higher mathematics and engineering and editor of a German-English physics dictionary. He is widely known as an expert in mathematics and the related sciences.

THE PUBLISHERS

FOREWORD

The terms that constitute this "German-English Dictionary of Mathematics" have been collected from textbooks and other authoritative works in the field of mathematics on the basis of long years of experience in scientific and technical translation.

The present work is intended as a supplement to, and not as a substitute for, a general German-English dictionary. The student of German will note immediately that the nontechnical every-day translations of many terms have been excluded. On the other hand, every effort has been made to include all possible translations applicable in mathematics and related fields. An example will illustrate this point:

Zug (m) circuit, path, track; closed curve (on
Riemann surface); drawing (of a ball);
(phys.) pull, tension

Another device employed to eliminate guesswork and mistranslation is the use of model phrases and sentences showing the application of a term in context. For example:

Eikonalgleichung (f) eiconal equation. die
E. gehorcht dem Fermatschen Gesetz
der kürzesten Ankunft; the eiconal equa-
tion obeys Fermat's law of least time

Not counting subtitles, synonyms, etc., this dictionary contains more than 8500 entries, many of them not available either in large German-English dictionaries or in bilingual technical and scientific works.

Users of this dictionary are invited to communicate their comments and suggestions to the author in care of the publisher.

CHARLES J. HYMAN

ABBREVIATIONS

(a) adjective	(math.) mathematics
(adv) adverb	(meas.) measure
(astr.) astronomy	(mech.) mechanics
cf. confer	(n) neuter
(chem.) chemistry	(N) proper name
(cryst.) crystallography	(opt.) optics
(dat.) dative	(phot.) photography
(descr.) descriptive geometry	(phys.) physics
(elec.) electricity	(pl.) plural
(electron.) electronics	(sing.) singular
(engin.) engineering	(statist.) statistics
(f) feminine	(surv.) surveying
(geog.) geography	(symb.) symbol
(geom.) geometry	(vi) intransitive verb
(log.) logic	(vr) reflexive verb
(mach.) machinery	(v. recip.) reciprocal verb
(magnet.) magnetism	(vt) transitive verb

A

Abakus (m) abacus

abändern (vt) alter, change, modify, vary

Abänderung (f) change, modification, variation

Abbild (n) image; map

abbilden (vt) map, make an image of

Abbildung (f) map, mapping, image, projection, representation.

flächentreue A: equal-area mapping or projection;

konforme oder winkeltreue A: conformal or angle-preserving or isogonal mapping;

längentreue A: length-preserving or equidistant mapping

Abbildungsprinzip (n) mapping principle

Abbildungssatz (m) mapping theorem or principle

Abbildungsverfahren (n) mapping method or process

abbösch (vt, vi) slant, slope

Abböschung (f) slant, slanting, sloping

abbrechen (vt, vi) break off.

die Reihe nach dem ersten Glied

abbrechen: break off the series after the first term

Abel (N) Abelscher Hilfssatz: Abel's lemma; Abelsche Asymptotik:

Abelian asymptotic behavior;

Abelsches Integral: Abelian integral

Aberration (f) aberration

Aberrationswinkel (m) angle of aberration

Abfall (m) decrease, drop

abfallen (vi) decline, decrease, slope down

abflachen (vt, vr) flatten; level off; become flat or level

Abflachung (f) flattening

abgeflacht (a) flattened

abgekehrt (a) turning away. (cf. abgewandt)

abgekürzt (a) abbreviated, abridged, short, shortened

abgeleitet (a) derived

Abgeleitete (f) derivative, derived function

abgeplattet (a) flattened, oblate

abgeschlossen (a) closed

Abgeschlossenheit (f) closure.

A. einer Funktionenfolge: closure of a sequence of functions

Abgeschlossenheitskriterium (n) closure criterion

abgestumpft (a) truncated

abgestutzt (a) truncated

abgewandt (a) turning away.

abgewandte Spitze: ceratoid cusp

abgrenzen (vt) bound, delimit, demarcate

Abgrenzung (f) delimitation, demarcation

abhängig (a) dependent

Abhängigkeit (f) dependence

Abhängigkeitskoeffizient (m) coefficient of contingency

abkürzen (vt) abridge, shorten

Ablauf (m) course, passage

ablaufen (vi) pass; run down; wane

ableitbar (a) deducible

Ableitbarkeit (f) deducibility

ableiten (vt) deduce, derive; differentiate (a function)

Ableitung (f) derivation; derivate; derivative, derived function, differential coefficient, differential quotient, differentiation

Ableitungsformel (f) formula for derivatives

Ableitungsgleichung (f) equation for derivatives

Ableitungsindex (m) derivative subscript

Ableitungsordnung (f) order of derivative

Ableitungsprozess (m) process of differentiation, derivative process

Ableitungsvektor (m) derivative vector

ablenken (vt) deflect, divert

Ablenkung (f) deflection, deviation, diversion

Ablenkungsfeld (n) deflecting field

Ablenkungskraft (f) deflecting force

Ablenkungsprisma (n) deviation prism

<u>Ablenkungswinkel</u> (m) angle of deflection	<u>Abstandstripel</u> (n) distance triplet
<u>Ablenkungszahl</u> (f) coefficient of deflection	<u>Abstandsverhältnis</u> (n) distance ratio
<u>ablesen</u> (vt) read off	<u>abstecken</u> (vt) lay or mark out, plot
<u>Ablesung</u> (f) reading	<u>Absteckung</u> (f) laying or staking out, plotting
<u>abmessen</u> (vt) measure off	<u>abstehen</u> (vi) be distant from
<u>Abmessung</u> (f) measurement	<u>absteigen</u> (vt) descend
<u>Abnahme</u> (f) decrease, decrement	<u>abstossen</u> (vt) repel
<u>abnehmen</u> (vi) decrease	<u>Abstossung</u> (f) repulsion
<u>abnehmend</u> (a) decreasing	<u>Abstossungskraft</u> (f) repelling force
<u>abplattten</u> (vt, vr) flatten, make oblate; become oblate	<u>abstrakt</u> (a) abstract
<u>Abplattung</u> (f) flattening, ellipticity, oblateness; platykurtosis (of frequency curve)	<u>Abstraktion</u> (f) abstraction
<u>abrollen</u> (vt, vi, vr) unroll, unwind; (with auf) roll, or unroll, upon	<u>abstreichen</u> (vt) cross out, discard
<u>Abrollen</u> (n) unrolling, unwinding	<u>abstumpfen</u> (vt) truncate
<u>abrunden</u> (vt) round off; smooth	<u>abstutzen</u> (vt) truncate
<u>Abrundung</u> (f) rounding off; smoothing	<u>absurd</u> (a) absurd
<u>Abrundungsfehler</u> (m) error in rounding off	<u>Absurdität</u> (f) absurdity
<u>abschätzen</u> (vt) estimate, appraise; evaluate	<u>Abszisse</u> (f) abscissa
<u>Abschätzung</u> (f) estimate, appraisal; evaluation	<u>Abszissenachse</u> (f) axis of abscissas
<u>Abschätzungsfunktion</u> (f) estimating function	<u>Abszissendifferenz</u> (f) difference of abscissas
<u>abscheiden</u> (vt, vr) separate; remove	<u>abteilen</u> (vt) divide; separate
<u>Abscheidung</u> (f) separation; removal	<u>Abteilung</u> (f) division; separation (from)
<u>abschliessen</u> (vt) close off	<u>abtragen</u> (vt) lay or measure off
<u>Abschliessung</u> (f) closure	<u>Abtragung</u> (f) laying or measuring off
<u>abschneiden</u> (vt) cut off, intercept, subtend	<u>abtrennen</u> (vt) separate, remove
<u>Abschneidung</u> (f) cutting off	<u>Abtrennung</u> (f) separation; removal
<u>Abschnitt</u> (m) section, segment, intercept	<u>abwärts</u> (a) downward
<u>abschwächen</u> (vt) reduce, weaken	<u>abwechseln</u> (vi) alternate
<u>Abschwächen</u> (n), <u>Abschwächung</u> (f) reduction, weakening	<u>abwechselnd</u> (a) alternate, alternating
<u>Absicht</u> (f) aim, purpose	<u>Abwechslung</u> (f) alternation
<u>absolut</u> (a) absolute	<u>abweichen</u> (vi) deviate, be deflected
<u>Absolutglied</u> (n) absolute term	<u>Abweichung</u> (f) deviation; deflection; variation, variance
<u>Absolutheit</u> (f) absoluteness	<u>Abweichungsmoment</u> (n) deviation moment
<u>Absolutwert</u> (m) absolute value	<u>Abweichungspunkt</u> (m) deviation point
<u>absondern</u> (vt) detach, separate	<u>Abweichungswinkel</u> (m) angle of deflection or deviation; (astr.) declination
<u>Absonderung</u> (f) removal, separation	<u>abwerfen</u> (vt) net (as profit)
<u>Absorptionsgesetz</u> (n) law of absorption	<u>abwickelbar</u> (a) developable
<u>abspalten</u> (vt) split off	<u>Abwickelbarkeit</u> (f) developability
<u>Abspaltung</u> (f) splitting off	<u>Abwickelkrümmung</u> (f) tangential curvature, geodesic curvature
<u>Abstand</u> (m) distance, length	<u>abwickeln</u> (vt) develop or unroll, unwind
<u>abstandsgleich</u> (a) equidistant	<u>Abwicklung</u> (f) development, unrolling; unwinding
<u>Abstandspunkt</u> (m) (astr.) apsis	

<u>Abwicklungskurve</u> (f) involute	<u>Achter</u> (m) figure eight
<u>abzählbar</u> (a) countable, denumerable, enumerable	<u>Achterkurve</u> (f) figure eight
<u>Abzählbarkeit</u> (f) countability, denumerability, enumerability	<u>achtfach</u> (a) eightfold
<u>abzählbarviel</u> (a) having cardinality aleph-null ($\aleph_0$)	<u>achtfältig</u> (a) eightfold
<u>abzählen</u> (vt) count, denumerate, enumerate	<u>Achtflach</u> (n) octahedron
<u>abzählende Geometrie</u> : enumerative geometry	<u>achtflächig</u> (a) octahedral
<u>Abzählung</u> (f) count(ing), denumeration	<u>Achtflächner</u> (m) octahedron
<u>abziehen</u> (vt) subtract	<u>achtmal</u> eight times
<u>Abzinsungsfaktor</u> (m) present worth of a unit amount	<u>achtmalig</u> (a) eight times
<u>Abzug</u> (m) deduction	<u>achtseitig</u> (a) eight-sided
<u>Achse</u> (f) axis, line of reference	<u>achtzählig</u> (a) octuple
<u>Achsenabschnitt</u> (m) intercept on axis	<u>achtzehn</u> eighteen
<u>Achsenabstand</u> (m) distance of axis	<u>achtzig</u> eighty
<u>Achsendrehung</u> (f) rotation or revolution about an axis	<u>achtzigst</u> eightieth
<u>Achsendreibein</u> (n), <u>Achsendreieck</u> (n) trihedral (angle) of coordinate axes	<u>Adabsurdumführung</u> (f) reductio ad absurdum
<u>achsenförmig</u> (a) axial	<u>Addend</u> (m) addend
<u>Achsenkoordinate</u> (f) axial coordinate	<u>addieren</u> (vt, vi) add. <u>zu addierende Konstante</u> : additive constant
<u>Achsenkreuz</u> (n) figure of an axial system of coordinates	<u>Addiermaschine</u> (f) adding machine
<u>Achsenlänge</u> (f) length of axis	<u>Addierung</u> (f) addition
<u>Achsenrichtung</u> (f) direction of axis (or axes), axial direction	<u>Addition</u> (f) addition
<u>Achsenschnitt</u> (m) section through the axis; intercept on an axis	<u>Additionsfehler</u> (m) mistake in addition
<u>Achsenschnittform</u> (f) intercept form of equation (of line, etc.)	<u>Additionsformel</u> (f) addition formula
<u>Achsensumme</u> (f) sum of the axes	<u>Additionsmaschine</u> (f) adding machine
<u>Achsensymmetrie</u> (f) axial symmetry	<u>Additionszeichen</u> (n) addition or plus sign
<u>achsensymmetrisch</u> (a) axially symmetrical	<u>additiv</u> (a) additive
<u>Achsenverhältnis</u> (n) axial ratio	<u>Adiabate</u> (f) adiabatic curve
<u>Achsenwinkel</u> (m) angle between axes, angle of ordination, axial angle	<u>adiabatisch</u> (a) adiabatic
<u>acht</u> eight; eighth	<u>adjungieren</u> (vt) adjoin
<u>Acht</u> (f) figure eight	<u>adjungiert</u> (a) adjoint
<u>Achteck</u> (n) octagon	<u>Adjungierte</u> (f) adjoint, complement
<u>Achtel</u> (n) eighth part	<u>Adjunkte</u> (f) complementary determinant, algebraic complement, cofactor
<u>Achtelellipsoid</u> (n) octant of an ellipsoid	<u>Adjunktion</u> (f) adjunction
<u>Achtelfläch</u> (n) ogdohedron	<u>Adler</u> (m) eagle; back or tail of coin
<u>achtelflächig</u> (a) ogdohedral	<u>Affensattel</u> (m) monkey saddle (point), parabolic umbilic
<u>Achtelflächner</u> (m) ogdohedron	<u>affin</u> (a) affine. <u>affiner Zusammenhang</u> : affine connectivity or relationship
<u>Achtelkugel</u> (f) octant of a sphere	<u>Affinität</u> (f) affinity
<u>Achtelmeile</u> (f) furlong	<u>Affinitätsachse</u> (f) axis of affinity
<u>achtens</u> (adv) in the eighth place, eighthly	<u>Aggregat</u> (n) aggregate
	<u>Aggregatzustand</u> (m) state of matter
	<u>ähnlich</u> (a) similar
	<u>ähnlich-geordnet</u> (a) similarly ordered
	<u>ähnlich-isomorph</u> (a) order-isomorphic
	<u>Ähnlichkeit</u> (f) similarity, similitude

<u>Ähnlichkeitsachse</u> (f) axis of similitude	<u>Amplitude</u> (f) amplitude, anomaly, azimuth, polar angle
<u>Ähnlichkeitskreis</u> (m) circle of similitude	<u>Amplitudengleichheit</u> (f) equality of amplitudes
<u>Ähnlichkeitspunkt</u> (m) center of similitude	<u>Amplitudenfunktion</u> (f) function of the amplitude
<u>Ähnlichkeitstransformation</u> (f) transformation of similarity or similitude; homothetic transformation	<u>Amplitudenkonstante</u> (f) amplitude constant
<u>Ähnlichkeitsverhältnis</u> (n) ratio of similitude	<u>Amplitudenkurve</u> (f) amplitude curve
<u>Ähnlichkeitszentrum</u> (n) center of similitude	<u>Amplitudenvektor</u> (m) amplitude vector
<u>Ährenkurve</u> (f) Cotes' spiral, épi	<u>Amplitudenverhältnis</u> (n) amplitude ratio
<u>Aktion</u> (f) action	<u>anaklastisch</u> (a) anaclastic
<u>aktuell</u> (a) actual	<u>anallagmatisch</u> (a) anallagmatic
<u>Akustik</u> (f) acoustics	<u>analog</u> (a) analogous
<u>akustisch</u> (a) acoustic	<u>Analogie</u> (f) analogy
<u>Akzeleration</u> (f) acceleration	<u>Analogiemaschine</u> (f) analog computer
<u>Akzeptierungseigenschaft</u> (f) operating characteristic function	<u>Analogon</u> (n) analogon, analog
<u>akzessorisch</u> (a) accessory	<u>Analyse</u> (f) analysis
<u>Aleph</u> (n) Hebrew letter ℵ	<u>Analysenfehler</u> (m) error in analysis
<u>Alephformel</u> (f) aleph formula	<u>analysieren</u> (vt) analyze
<u>Alephhypothese</u> (f) aleph hypothesis	<u>Analysis</u> (f) analysis
<u>Algebra</u> (f) algebra	<u>analytisch</u> (a) analytic
<u>algebraisch</u> (a) algebraic	<u>analytisch-geometrisch</u> (a) analytic-geometric
<u>algebraisch-abgeschlossen</u> (a) algebraically closed or complete	<u>ander</u> (a) other
<u>algebraisieren</u> (vt) algebraize	<u>ändern</u> (vt, vr) change, vary
<u>Algebraisierung</u> (f) algebraization	<u>anderthalb</u> (a) one and a half
<u>Algebrenklasse</u> (f) class of algebras	<u>Anderung</u> (f) change, variation
<u>Algebrenklassengruppe</u> (f) group of classes of algebras	<u>Anderungsgeschwindigkeit</u> (f) rate of change
<u>Algorithmus</u> (m) algorithm	<u>aneinanderlegend</u> (a) mutually adjacent
<u>aliquot</u> (a) aliquot	<u>aneinanderstossen</u> (vi) join, abut
<u>allgemein</u> (a) general, generic, universal, literal	<u>Anfangsbedingung</u> (f) initial condition
<u>allgemeingültig</u> (a) generally or universally valid	<u>Anfangsdaten</u> (npl) initial data or conditions
<u>Allgemeinheit</u> (f) generality	<u>Anfangsgeschwindigkeit</u> (f) initial velocity
<u>Allgemeinzeichen</u> (n), <u>Allzeichen</u> (n) universal quantifier	<u>Anfangskoeffizient</u> (m) leading coefficient
<u>Alpha</u> (n) Greek letter alpha (A, α)	<u>Anfangslage</u> (f) initial position
<u>Alternative</u> (f) alternative.	<u>Anfangsoszillation</u> (f) initial oscillation
<u>Fredholmsche A</u> : Fredholm's alternative	<u>Anfangspunkt</u> (m) initial point, origin, starting point
<u>alternieren</u> (vi) alternate.	<u>Anfangsrichtung</u> (f) initial direction
<u>alternierendes Verfahren</u> : alternating method or process (of Schwarz)	<u>Anfangswert</u> (m) initial value
<u>Altersgliederung</u> (f) age distribution	
<u>Altersversicherung</u> (f) old-age insurance	
<u>Ampère</u> (n) ampere	
<u>Ampèremeter</u> (n) ammeter	
<u>Ampèrestunde</u> (f) ampere-hour	

<u>Anfangszahl</u> (f) initial number	<u>anordnen</u> (vt) arrange, order
<u>Anfangszeit</u> (f) initial time	<u>Anordnung</u> (f) arrangement, order,
<u>Anfangszustand</u> (m) initial state	array
<u>angenähert</u> (a) approximate	<u>anormal</u> (a) abnormal
<u>angeordnet</u> (a) ordered	<u>anpassen</u> (vt) fit, adapt
<u>angeschrieben</u> (a) escribed	<u>Anpassung</u> (f) fitting
<u>angewandt</u> (a) applied	<u>Anpassungsfähigkeit</u> (f) adaptability
<u>angleichen</u> (vt) equate, adjust, adapt	<u>Ansatz</u> (m) formulation or set-up
<u>Angleichung</u> (f) equality, adjustment	(of an equation)
<u>angreifen</u> (vi) be applied, act on	<u>anschaulich</u> (a) intuitive; graphic,
<u>angrenzen</u> (vi) be adjacent or con-	visual
tiguous	<u>Anschauung</u> (f) inspection; intuition
<u>Angriffspunkt</u> (m) point of application	<u>Anschauungsbegriff</u> (m) intuitive
<u>angular</u> (a) angular	idea
<u>Anhaltspunkt</u> (m) distinguished point	<u>anschmiegen</u> (vt) adapt to, fit to;
(of curve)	(vr) press against, osculate
<u>anhängen</u> (vt) annex, append	<u>Anschmiegung</u> (f) osculation;
<u>anharmonisch</u> (a) anharmonic	adaptation
<u>anhäufen</u> (vt, vr) accumulate, cluster	<u>anschreiben</u> (vt) write down, es-
<u>Anhäufung</u> (f) accumulation, cluster	cribe
<u>anisometrisch</u> (a) anisometric	<u>ansetzen</u> (vt) set up (an equation)
<u>anisotrop</u> (a) anisotropic	<u>Ansicht</u> (f) view
<u>Anisotropie</u> (f) anisotropy	<u>Ansichtebene</u> (f) plane of projec-
<u>anisotropisch</u> (a) anisotropic	tion
<u>Ankreis</u> (m) escribed circle	<u>anspannen</u> (vt) stretch
<u>Ankreishalbmesser</u> (m) radius of es-	<u>Anspruch</u> (m) claim
cribed circle	<u>anstossen</u> (vi) be adjacent or con-
<u>Ankreismittelpunkt</u> (m) center of es-	tiguous; strike (against), impinge
cribed circle, excenter	<u>anstossend</u> (a) adjacent
<u>anliegen</u> (vi) be adjacent	<u>anstreichen</u> (vt) mark
<u>anlegend</u> (a) adjacent	<u>Anteil</u> (m) share, portion, compo-
<u>annähern</u> (vt, vr) approach, approxi-	nent
mate	<u>antiautomorph</u> (a) antiautomorphic
<u>Annäherung</u> (f) approach, convergence;	<u>Antiautomorphismus</u> (m) antiauto-
approximation	morphism
<u>Annäherungsfläche</u> (f) approximation	<u>antiisomorph</u> (a) anti-isomorphic
surface	<u>Antiisomorphismus</u> (m) anti-iso-
<u>Annäherungsgrad</u> (m) degree of approxi-	morphism
mation	<u>Antikaustik</u> (f) anticaustic, second-
<u>Annäherungskurve</u> (f) approximation	ary caustic
curve	<u>antiklastisch</u> (a) anticlasic
<u>Annäherungsverfahren</u> (n) method of	<u>antikommutativ</u> (a) anticommuta-
approximation	tive
<u>annäherungsweise</u> (adv) approximately	<u>Antikommutator</u> (m) anticommuta-
<u>Annäherungswert</u> (m) approximate	tor
value	<u>Antilogarithmus</u> (m) antilogarithm
<u>Annahme</u> (f) assumption, hypothesis	<u>Antinomie</u> (f) antinomy
<u>Annahmeziffer</u> (f) acceptance number	<u>antiparallel</u> (a) antiparallel
<u>annehmen</u> (vt) assume; accept	<u>antireflexiv</u> (a) antireflexive
<u>annullieren</u> (vt) annihilate	<u>Antisymmetrie</u> (f) antisymmetry
<u>Annullierung</u> (f) annihilation	<u>antisymmetrisch</u> (a) antisymmetric
<u>anomal</u> (a) abnormal, anomalous	<u>Antithese</u> (f) antithesis
<u>Anomalie</u> (f) anomaly; amplitude,	<u>anwachsen</u> (vi) accrue
argument, polar angle	<u>anwenden</u> (vt) apply

<u>Anwendung</u> (f) application	<u>Äquinoktium</u> (n) equinox
<u>Anwinkel</u> (mpl) pair of interior (exterior) angles on same side of transversal cutting two lines	<u>Äquipotentialfläche</u> (f) equipotential surface
<u>Anzahl</u> (f) number	<u>Äquivalent</u> (n) equivalent
<u>Anzahlbegriff</u> (m) concept of number	<u>äquivalent</u> (a) equivalent
<u>anziehen</u> (vt) attract	<u>Äquivalenz</u> (f) equivalence
<u>Anziehung</u> (f) attraction, pull	<u>Äquivalenzbeweis</u> (m) equivalence proof
<u>Anziehungsgesetz</u> (n) law of attraction	<u>Äquivalenzbeziehung</u> (f) equivalence relation
<u>Anziehungskraft</u> (f) attractive force	<u>Äquivalenzgesetz</u> (n) equivalence law or principle
<u>aperiodisch</u> (a) aperiodic	<u>Äquivalenzprinzip</u> (n) principle of equivalence
<u>Aphel</u> (n) aphelion	<u>Äquivalenzrelation</u> (f) equivalence relation
<u>Apogäum</u> (n) apogee	<u>Äquivalenzsatz</u> (m) equivalence theorem
<u>apolar</u> (a) apolar	<u>Arbeit</u> (f) work
<u>Apolarität</u> (f) apolarity	<u>Arbeitseinheit</u> (f) unit of work
<u>aposteriorisch</u> (a) a posteriori	<u>Arbeitsfähigkeit</u> (f) capacity for doing work, energy
<u>Applikate</u> (f) y-coordinate (in two dimensions), z-coordinate (in three dimensions)	<u>arbiträr</u> (a) arbitrary
<u>Applikatenachse</u> (f) y-axis (in two dimensions), z-axis (in three dimensions)	<u>arcus</u> (m) arc (= <u>Arkus</u>)
<u>Approximation</u> (f) approximation.	<u>arcus cosecans</u> (m) arc or inverse cosecant
<u>grobe A.:</u> crude or rough approximation	<u>arcus cosecans hyperbolicus</u> (m) arc or inverse hyperbolic cosecant
<u>Approximationsmethode</u> (f) method of approximation	<u>arcus cosinus</u> (m) arc or inverse cosine
<u>Approximationstheorie</u> (f) theory of approximation	<u>arcus cosinus hyperbolicus</u> (m) arc or inverse hyperbolic cosine
<u>approximativ</u> (a) approximate	<u>arcus cotangens</u> (m) arc or inverse cotangent
<u>approximieren</u> (vt) approximate	<u>arcus cotangens hyperbolicus</u> (m) arc or inverse hyperbolic cotangent
<u>apriorisch</u> (a) a priori	<u>arcus secans</u> (m) arc or inverse secant
<u>Apsidalfläche</u> (f) apsidal surface	<u>arcus secans hyperbolicus</u> (m) arc or inverse hyperbolic secant
<u>Apsiden</u> (fpl) apsides	<u>arcus sinus</u> (m) arc or inverse sine
<u>Apsidenlinie</u> (f) line of apsides	<u>arcus sinus hyperbolicus</u> (m) arc or inverse hyperbolic sine
<u>Apsis</u> (f) apsis	<u>arcus tangens</u> (m) arc or inverse tangent
<u>Aquator</u> (m) equator	<u>arcus tangens hyperbolicus</u> (m) arc or inverse hyperbolic tangent
<u>Aquatorachse</u> (f) equatorial axis	<u>Argument</u> (n) argument, amplitude, polar angle; independent variable or argument
<u>Aquatorbreite</u> (f) equatorial latitude	<u>Argumentbereich</u> (m) argument domain
<u>Aquatoreal</u> (n) equatorial	<u>Argumentklasse</u> (f) argument class
<u>Aquatorebene</u> (f) plane of equator	
<u>Aquatorhöhe</u> (f) equatorial altitude	
<u>Aquatorial</u> (n) equatorial	
<u>äquatorial</u> (a) equatorial	
<u>Aquatorialbogen</u> (m) equatorial arc	
<u>Aquatorialfläche</u> (f) equatorial surface	
<u>Aquatorialsystem</u> (n) equatorial system	
<u>äquianharmonisch</u> (a) equianharmonic	
<u>äquidistant</u> (a) equidistant	
<u>Äquidistanz</u> (f) equal distance	
<u>äquilong</u> (a) equilong. <u>äquilonge</u>	
<u>Abbildung:</u> equilong mapping	
<u>äquinoktial</u> (a) equinoctial	

<u>Argumentmenge</u> (f) argument set	<u>Aufeinanderfolge</u> (f) succession
<u>Arithmetik</u> (f) arithmetic	<u>aufeinanderfolgen</u> (vi) follow one after another
<u>Arithmetiker</u> (m) arithmetician	<u>aufeinanderfolgend</u> (a) consecutive
<u>arithmetisch</u> (a) arithmetic	<u>aufeinanderlegen</u> (vt) superimpose, superpose
<u>Arkus</u> (m) arc (=arcus)	<u>Aufeinanderlegung</u> (f) superposition
<u>Arkusfunktion</u> (f) arc or inverse trigo- nometric function, antitrigonomet- ric function	<u>auffassen</u> (vt) conceive; regard; view
<u>Arkuskosekans</u> (m) arc or inverse cose- cant	<u>Auffassung</u> (f) conception; point of view, standpoint.
<u>Arkuskosinus</u> (m) arc or inverse cosine	<u>dynamische A. der Metrik</u> : met- rics from the standpoint of dyna- mics
<u>Arkuskotangens</u> (m) arc or inverse co- tangent	<u>Auffassungsweise</u> (f) = <u>Auffassung</u>
<u>Arkussekans</u> (m) arc or inverse secant	<u>Aufgabe</u> (f) exercise, problem
<u>Arkussinus</u> (m) arc or inverse sine	<u>aufgehen</u> (vi) leave no remainder, divide without remainder
<u>Arkustangens</u> (m) arc or inverse tan- gent	<u>aufheben</u> (vr) cancel (out)
<u>Art</u> (f) kind, species	<u>Aufhebung</u> (f) cancellation
<u>artmässig</u> (a) qualitative	<u>aufklappen</u> (vt) turn up
<u>assoziativ</u> (a) associative	<u>auflösbar</u> (a) solvable
<u>Assoziativgesetz</u> (n) associative law	<u>Auflösbarkeit</u> (f) solvability
<u>Ast</u> (m) branch (of curve)	<u>auflösen</u> (vt) resolve, solve; reduce (a fraction), remove (parentheses), untie (a knot)
<u>Asteroid</u> (m) asteroid, planetoid	<u>Auflösung</u> (f) solution; resolution (of singularities), untying (of a knot)
<u>Asteroide</u> (f), <u>Astroide</u> (f) astroid, tetracuspid, four-cusped hypocyc- loid	<u>Aufpunkt</u> (m) test point
<u>Astronomie</u> (f) astronomy	<u>aufrechterhalten</u> (vt), <u>aufrechthalten</u> (vt) maintain, preserve
<u>Asymmetrie</u> (f) asymmetry; skewness	<u>Aufrechterhaltung</u> (f), <u>Aufrechthal-</u> <u>tung</u> (f) maintenance, preserva- tion
<u>asymmetrisch</u> (a) asymmetric	<u>Aufriss</u> (m) elevation, vertical pro- jection
<u>Asymptote</u> (f) asymptote	<u>Aufrissebene</u> (f) vertical projection plane
<u>Asymptotenebene</u> (f) asymptotic plane	<u>aufrollen</u> (vt, vr) roll up
<u>Asymptotengleichung</u> (f) equation for asymptotes	<u>aufrunden</u> (vt) round off
<u>Asymptotenkegel</u> (m) asymptotic cone	<u>Aufrundung</u> (f) rounding off
<u>Asymptotenlinie</u> (f) asymptotic line or curve	<u>aufschlitzen</u> (vt) rip up, slit. <u>die längs der imaginären Achse</u> <u>aufgeschlitzte komplexe Ebene</u> : the complex plane slotted (or slit) along the imaginary axis
<u>Asymptotenprodukt</u> (n) product of asymptotic factors	<u>aufspaltbar</u> (a) decomposable
<u>Asymptotenrichtung</u> (f) asymptotic direction	<u>aufspalten</u> (vt) split up
<u>Asymptotenwinkel</u> (m) angle between two asymptotes	<u>Aufspaltung</u> (f) splitting up
<u>Asymptotik</u> (f) asymptotic behavior	<u>Aufspaltungsbild</u> (n) decomposition diagram
<u>asymptotisch</u> (a) asymptotic	<u>Aufspaltungsfaktor</u> (m) factor of splitting up
<u>Atom</u> (n) atom	<u>aufspannen</u> (vt) span
<u>atomar</u> (a) atomic	<u>aufsteigen</u> (vi) ascend
<u>Atombau</u> (m) atomic structure	<u>Aufsteigung</u> (f) ascension
<u>Atomgewicht</u> (n) atomic weight	
<u>Atomkern</u> (m) atomic nucleus	
<u>Atomnummer</u> (f) atomic number	
<u>Atomzahl</u> (f) atomic number	
<u>Atomzerfall</u> (m) atomic decay or dis- integration	
<u>Atomzertrümmerung</u> (f) atom smashing or splitting	

<u>aufsuchen</u> (vt) seek out, search for	<u>Auseinanderlaufen</u> (n) divergence
<u>Aufsuchung</u> (f) search	<u>auseinanderlaufend</u> (a) divergent
<u>auftragen</u> (vt) lay off, plot; transfer	<u>ausfegen</u> (vt) sweep out
<u>Auftragung</u> (f) laying off, plotting	<u>Ausfegeverfahren</u> (n) method or process
<u>auftreffen</u> (vi) fall or strike upon, im-	of sweeping out (Poincaré's ba-
pinge	layage)
<u>Auftreffen</u> (n) impact, impingement	<u>ausführbar</u> (a) feasible
<u>Auftreffgeschwindigkeit</u> (f) speed of	<u>ausführen</u> (vt) execute, perform
impact	<u>Ausführung</u> (f) execution, operation
<u>Auftreffpunkt</u> (m) point of impact	<u>ausfüllen</u> (vt) fill
<u>Auftreffwinkel</u> (m) angle of impact	<u>Ausfüllung</u> (f) filling
or incidence	<u>Ausgangsfläche</u> (f) initial surface
<u>aufwärts</u> (adv) upward	<u>Ausgangshyperfläche</u> (f) initial hy-
<u>aufzählen</u> (vt) enumerate	persurface
<u>Aufzählung</u> (f) enumeration	<u>Ausgangskurve</u> (f) initial curve
<u>aufzeichnen</u> (vt) draw, sketch; record	<u>Ausgangspunkt</u> (m) starting point,
<u>Aufzeichnung</u> (f) drawing, sketch; plot-	origin
ting	<u>Ausgangswahrscheinlichkeit</u> (f) a
<u>Aufzinsungsfaktor</u> (m) coefficient of	priori probability
the present worth	<u>ausgeartet</u> (a) degenerate
<u>Auge</u> (n) eye; pip or spot (on a die)	<u>ausgehen</u> (vi, vr) start or issue from
<u>Augenblick</u> (m) instant, moment	a point; be exact, leave no re-
<u>augenblicklich</u> (a) instantaneous	mainder
<u>Augenpunkt</u> (m), <u>Augpunkt</u> (m) point	<u>ausgeschlossen</u> (a) excluded, impos-
of sight or vision; orthogonal pro-	sible
jection of point; principal point	<u>ausgezeichnet</u> (a) distinguished, sin-
<u>ausarbeiten</u> (vt) work out, do	gular, canonical, principal
<u>ausarten</u> (vi) degenerate	<u>ausgleichen</u> (vt) adjust, compensate
<u>Ausartung</u> (f) degeneration	<u>Ausgleichskurve</u> (f) fitting curve
<u>ausbreiten</u> (vt, vr) spread, propagate	<u>Ausgleichung</u> (f) adjustment
<u>Ausbreitung</u> (f) spread; propagation	<u>Ausgleichungsrechnung</u> (f) adjust-
<u>Ausbreitungsvektor</u> (m) propagation	ment of observations
vector	<u>ausgliedern</u> (vt) classify
<u>Ausbreitungsweg</u> (m) path of propaga-	<u>Ausgliederung</u> (f) classification
tion	<u>Ausklammern</u> (n) factoring out
<u>Ausbuchtung</u> (f) bending outwards,	<u>ausklammern</u> (vt) factor out, remove
bulge, convexity	a factor
<u>ausdehnen</u> (vt, vr) expand, extend,	<u>Ausmass</u> (n) amount, rate
stretch, dilate	<u>ausmessen</u> (vt) measure, take the
<u>Ausdehnung</u> (f) extension, dimension;	dimensions of
(phys.) dilation, expansion	<u>ausmultiplizieren</u> (vt) multiply out
<u>Ausdehnungsellipsoid</u> (n) ellipsoid of	<u>Ausnahmefall</u> (m) exceptional case
expansion	<u>auspotenzieren</u> (vt) expand by poly-
<u>Ausdehnungskoeffizient</u> (m) coeffi-	nomial theorem
cient of expansion	<u>Auspotenzieren</u> (n), <u>Auspotenzierung</u>
<u>Ausdehnungslehre</u> (f) theory of dimen-	(f) expanding by polynomial
sionality	theorem
<u>Ausdehnungsverhältnis</u> (n) ratio of ex-	<u>ausquadrieren</u> (vt) square out
pansion	<u>Ausquadrierung</u> (f) squaring out
<u>Ausdehnungszahl</u> (f) coefficient of ex-	<u>ausrechnen</u> (vt) compute, evaluate
pansion	<u>Ausrechnung</u> (f) computation, eval-
<u>Ausdruck</u> (m) expression	uation
<u>ausdrücken</u> (vt) express	<u>ausreduzieren</u> (vt) reduce (a repre-
<u>auseinanderlaufen</u> (vi) diverge	sentation)

<u>Aussage</u> (f) statement, sentence, assertion	<u>ausstreichen</u> (vt) cancel, delete
<u>Aussagenformel</u> (f) sentential formula	<u>Ausstreichung</u> (f) cancellation, deletion
<u>Aussagenfunktion</u> (f) propositional function	<u>Austausch</u> (m) exchange
<u>Aussagenkalkül</u> (m) propositional or sentential calculus	<u>austauschbar</u> (a) permutable, exchangeable
<u>Aussagenvariabel</u> (f) sentential variable	<u>Austauschbarkeit</u> (f) permutability, exchangeability
<u>Aussagenverbindung</u> (f) sentential combination or connective	<u>austauschen</u> (vt) exchange, replace
<u>Aussagenverknüpfung</u> (f) = <u>Aussagenverbindung</u> (f)	<u>Austauschsatz</u> (m) replacement theorem, exchange theorem
<u>Aussagezeichen</u> (n) sentential symbol	<u>ausüben</u> (vt) exert
<u>ausschalten</u> (vt) eliminate	<u>Ausübung</u> (f) exertion
<u>Ausschaltung</u> (f) elimination	<u>Auswahl</u> (f) choice, selection
<u>Ausschlag</u> (m) amplitude, swing, deviation; deflection (of a magnetic needle)	<u>Auswahlaxiom</u> (n) axiom of choice
<u>ausschlagen</u> (vi) swing; deviate	<u>Auswahlfunktion</u> (f) function of choice
<u>Ausschlagkurve</u> (f) amplitude curve (of pendulum vibration)	<u>Auswahlmenge</u> (f) set of choice
<u>ausschliessen</u> (vt) exclude	<u>ausweiten</u> (vt, vr) dilate, widen
<u>ausschliessend</u> (a) exclusive	<u>Ausweitung</u> (f) dilatation, widening
<u>ausschliesslich</u> (a) exclusive	<u>auswendig</u> (a) outside
<u>Ausschliessung</u> (f), <u>Ausschluss</u> (m) exclusion	<u>auswerten</u> (vt) evaluate
<u>Ausschlusslehre</u> (f) no-go gauge	<u>Auswertung</u> (f) evaluation
<u>ausschneiden</u> (vt) cut out	<u>auszählen</u> (vt) count; (statist.) sort, tabulate
<u>Ausschnitt</u> (m) sector	<u>Auszählung</u> (f) count; (statist.) sort, tabulation
<u>Ausschöpfungsmethode</u> (f) method of exhaustion	<u>auszeichnen</u> (vt) trace; distinguish
<u>ausser</u> (adv) externally, outside	<u>Auszeichnung</u> (f) tracing; distinction
<u>aussenden</u> (vt) emit	<u>ausziehen</u> (vt) extract (a root)
<u>Aussenfläche</u> (f) outer or exterior surface	<u>Ausziehung</u> (f) extraction (of a root)
<u>Aussenglied</u> (n) extreme (term)	<u>automorph</u> (a) automorphic
<u>Aussenraum</u> (m) exterior space	<u>Automorphismenbedingung</u> (f) automorphism condition
<u>Aussenseite</u> (f) outside	<u>Automorphismengruppe</u> (f) automorphism group
<u>Aussenwinkel</u> (m) exterior angle	<u>Automorphismenring</u> (m) automorphism ring
<u>äusser</u> (a) exterior, external, outer	<u>Automorphismus</u> (m) automorphism
<u>Äussere</u> (n) outside	<u>Axe</u> (f) axis
<u>ausserhalb</u> (adv, prep) outside	<u>axial</u> (a) axial
<u>äusserlich</u> (a) external, outward	<u>Axialsymmetrie</u> (f) axial symmetry
<u>äusserlich</u> (adv) outwardly, superficially	<u>Axiom</u> (n) axiom
<u>ausserordentlich</u> (a) extraordinary	<u>Axiomatik</u> (f) axiomatic theory, axiomatization
<u>äusserst</u> (a) outermost, extreme	<u>axiomatisch</u> (a) axiomatic
<u>ausserwesentlich</u> (a) non-essential	<u>axiomatisieren</u> (vt) axiomatize
<u>Aussonderungssaxiom</u> (n) axiom of separation	<u>Axiomatisierung</u> (f) axiomatization
<u>ausspringend</u> (a) convex	<u>Axiomensystem</u> (n) system of axioms
<u>ausstrahlen</u> (vt, vi) radiate	<u>Axonometrie</u> (f) axonometry
<u>Ausstrahlung</u> (f) radiation	<u>axonometrisch</u> (a) axonometric
<u>Ausstrahlungskurve</u> (f) radiating curve	<u>Azimut</u> (m) azimuth, polar angle
	<u>Azimutalebene</u> (f) azimuthal plane

Azimutalprojektion (f) azimuthal projection

Azimutalwinkel (m) azimuthal angle

Azimutkreis (m) azimuth circle

azyklisch (a) acyclic

B

Bahn (f) orbit, path, track

Bahnberechnung (f) orbital calculations

Bahnbewegung (f) orbital motion

Bahnkreis (m) path circle

Bahnkurve (f) orbital or path curve, trajectory

Bahnlänge (f) length of path

Bahnlinie (f) = Bahnkurve

Bahnpunkt (m) point of the orbit or path

Bahnrichtung (f) direction of the path

Bahntangente (f) tangent to the path curve, orbital tangent

Bahnvorstellung (f) idea of orbit or path

Balken (m) beam, bar

Balkendarstellung (f) bar graph

Balkendiagramm (n) bar graph

Balkenwage (f) beam scale or balance

Ballistik (f) ballistics

ballistisch (a) ballistic

Balmerserie (f) Balmer series

banal (a) banal, trivial

Band (n) band, strip

Bänderdiagramm (n) chart or graph composed of lines or bars

baryzentrisch (a) barycentric

Basis (f) base, basis; radix or base (of a power); radix (of a numerical system); simplex of reference (of line complex); (statist.) initial population

basisch (a) basal

Basisebene (f) base plane

Basisdarstellung (f) basis representation

Basiselement (n) basis element

Basisfläche (f) base (surface)

Basisfunktion (f) basis function

Basisgruppe (f) basis group

Basiskathete (f) base leg of a right triangle

Basislänge (f) length of the base

Basispunkt (m) base point; radix point (of scale of notation)

Basissatz (m) basis condition or theorem

Basissehne (f) base chord or line

Basisvektor (m) basis vector

Basiswert (m) base value

Basiswinkel (m) base angle

Basiszahl (f) basis number

Basiszeitraum (m) base period

beanspruchen (vt) stress

Beanspruchung (f) stress

bedeuten (vt) denote, mean, signify

Bedeutung (f) meaning, significance

bedeutungslos (a) insignificant; meaningless

bedingt (a) conditional

Bedingung (f) condition

Bedingungsgleichung (f) condition equation

befreien (vt) clear (of fractions, parentheses)

Befreiung (f) clearing (of fractions, parentheses)

befriedigen (vt) satisfy

Befriedigung (f) satisfying, satisfaction

Befund (m) finding, result

begleiten (vt) accompany, move with

begleitend (a) accompanying, moving (with).

begleitende Achsen, Kurve: moving (coordinate) axes, accompanying or companion curve

Begleiter (m), Begleiterin (f) companion

Begleiterscheinung (f) concomitant phenomenon

Begleitmatrix (f) companion matrix

begrenzen (vt) bound; intercept, limit

Begrenzung (f) boundary, delimitation

Begrenzungsfläche (f) boundary surface

Begrenzungskurve (f), Begrenzungs-
linie (f) boundary curve or line; contour, periphery

Begrenzungspunkt (m) boundary point

Begriff (m) concept, idea, notion

begrifflich (a) conceptual

Begriffsdefinition (f) definition of concepts

Begriffssystem (n) system of concepts

behandeln (vt) treat

Behandlung (f) treatment

beharren (vi) persist in, continue

Beharrung (f) persistence, continuance