Moduldokumentation

Modul Einführung in die Analysis (eana)

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# Einleitung

## Einleitung

Dieses Dokument stellt die Moduldokumentation für das Modul eana dar. Allfällige Unterlagen sind im Modulordner zu finden.

## Lernziele

Das Modul beinhaltet folgende Lernziele:

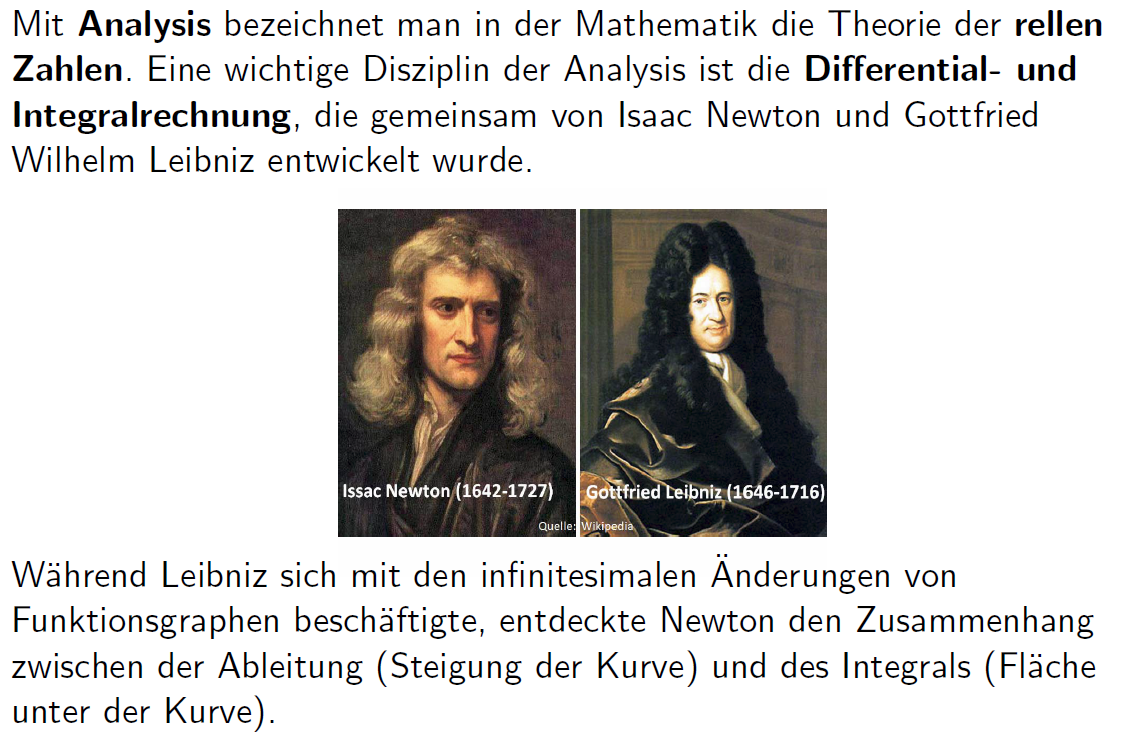
* Berechnen von Grenzwerten einfacher Folgen und Funktionen
* Interpretation und Berechnung der Ableitung einer Funktion
* Interpretation und Berechnung des Integrals von ausgewählten Funktionen
* Verstehen und Anwenden ausgewählter numerischer Näherungsverfahren für die näherungsweise Berechnung
  + von Funktionswerten und Funktionen (Taylor-Approximation)
  + von Nullstellen von Funktionen (Newton-Verfahren)
  + von bestimmten Integralen (Riemannsche Summen)
* Anwenden der Konzepte und Verfahren der Analysis auf technische Fragestellungen und Probleme
* Numerische Berechnung von ausgewählten Problemen mit Matlab

## Prüfungen

Die Modulnote setzt sich zu 50% aus zwei Semesterprüfungen zu je 25% und einer Modulschlussprüfung zu 50% zusammen.

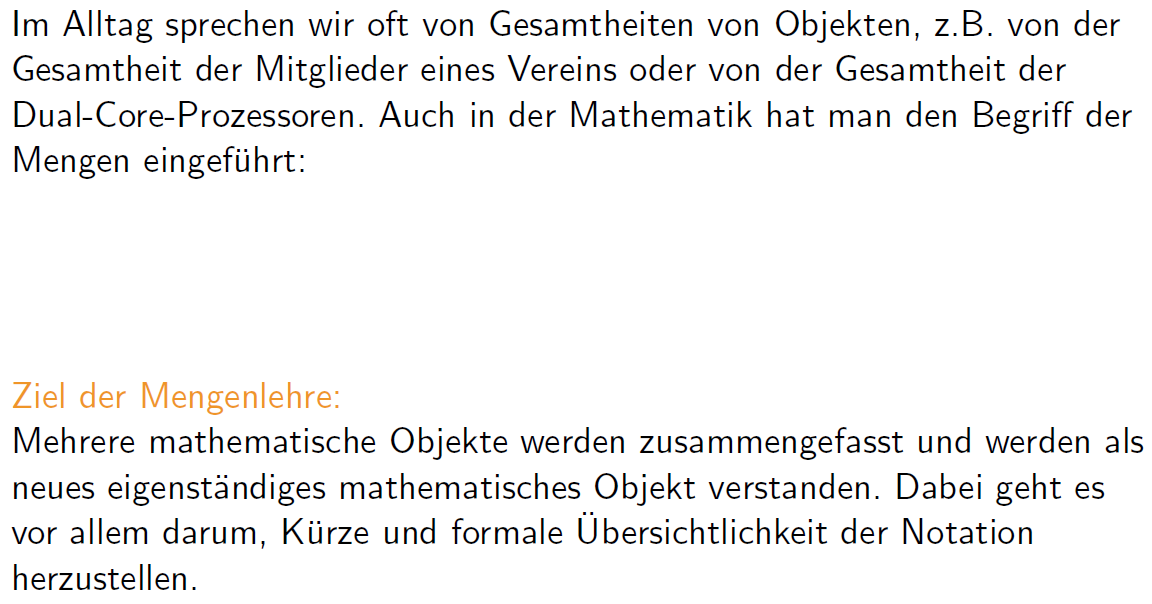
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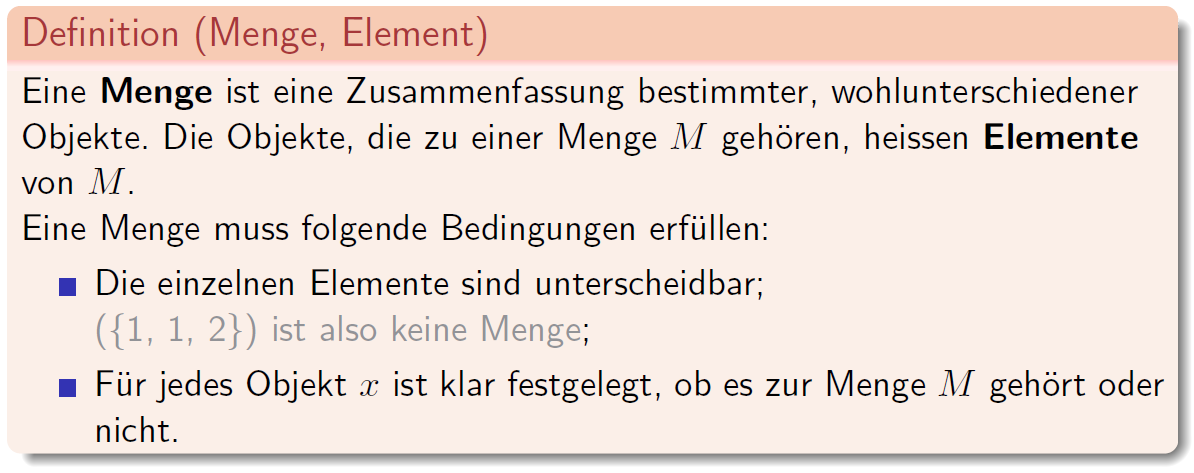
## Einleitung

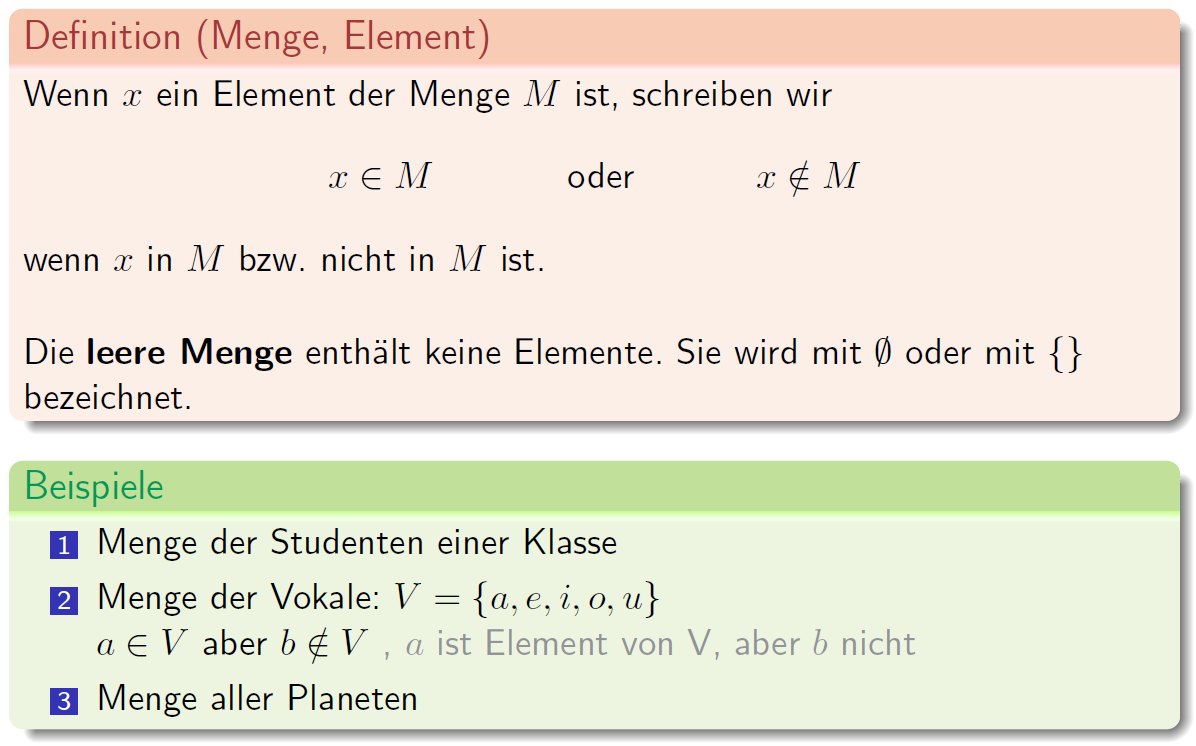


## Mengen

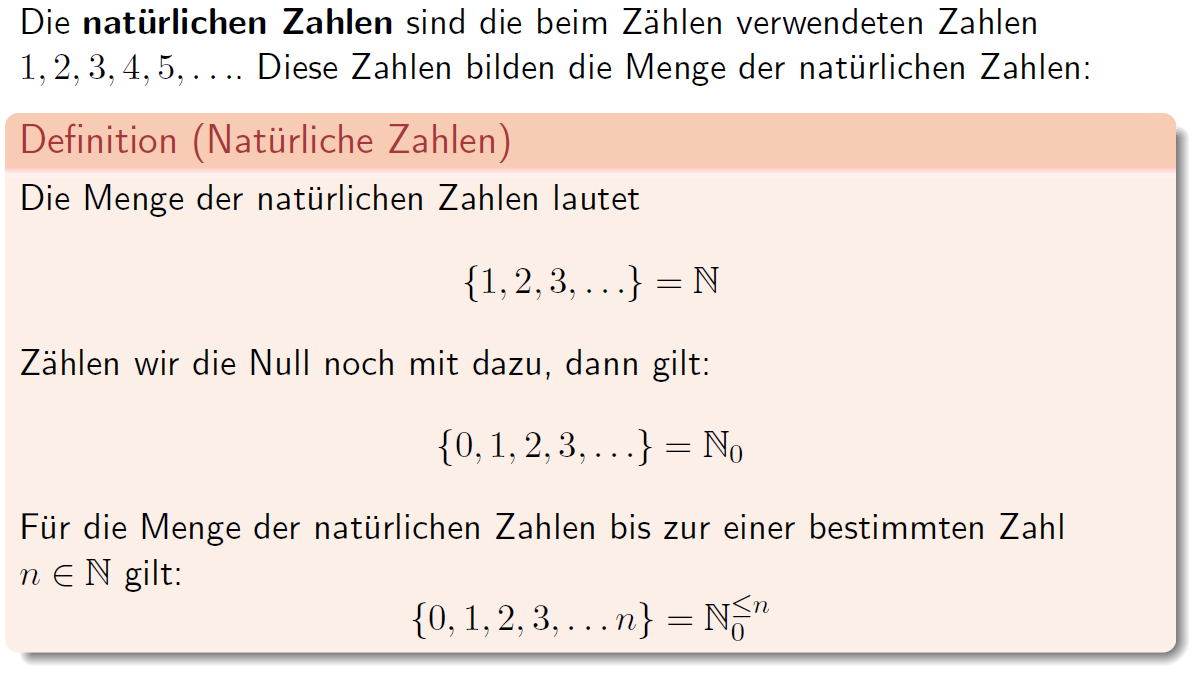
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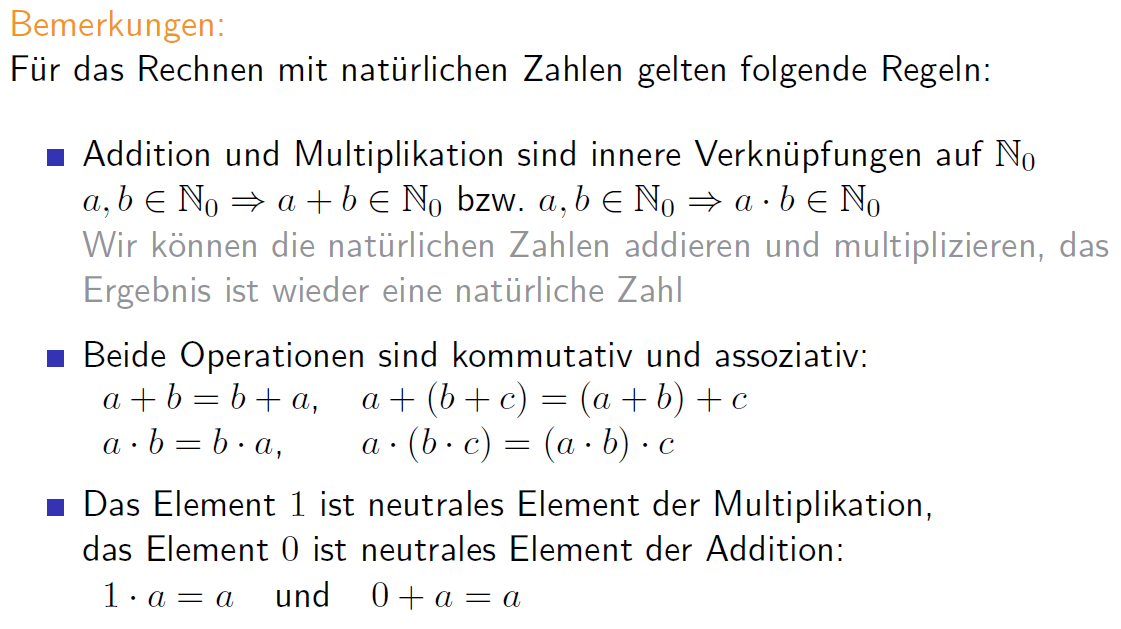




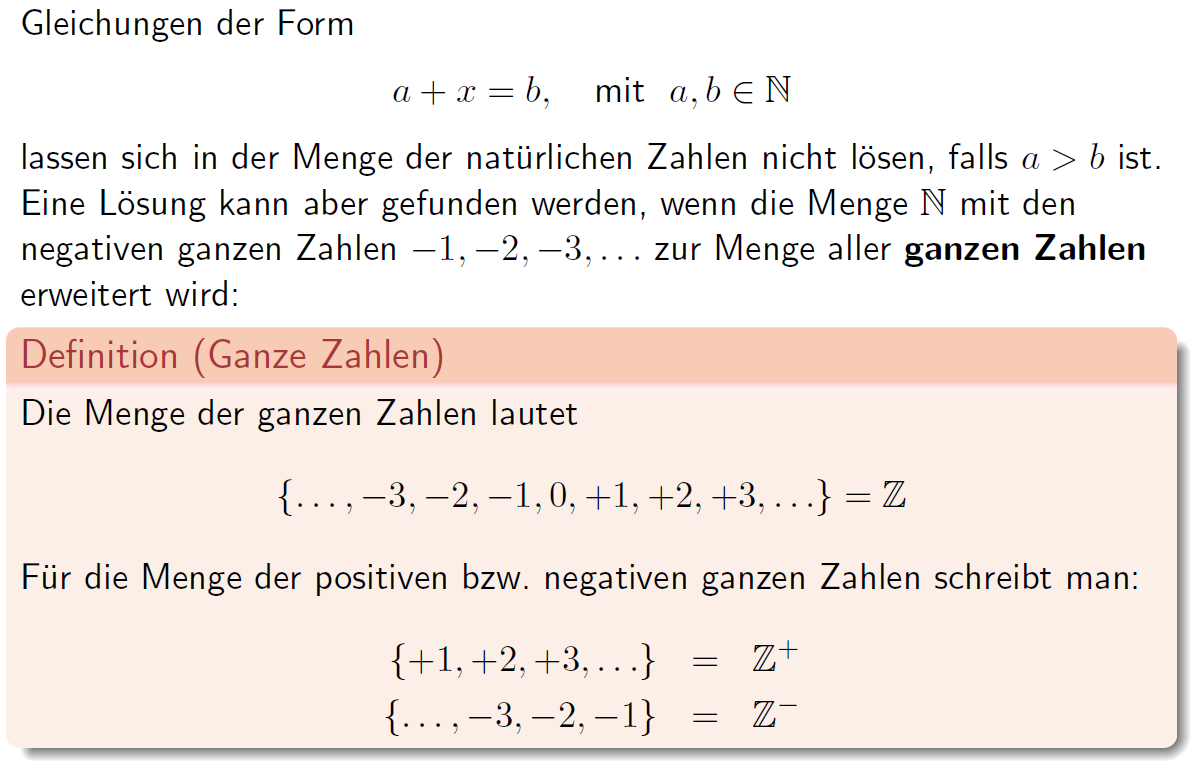


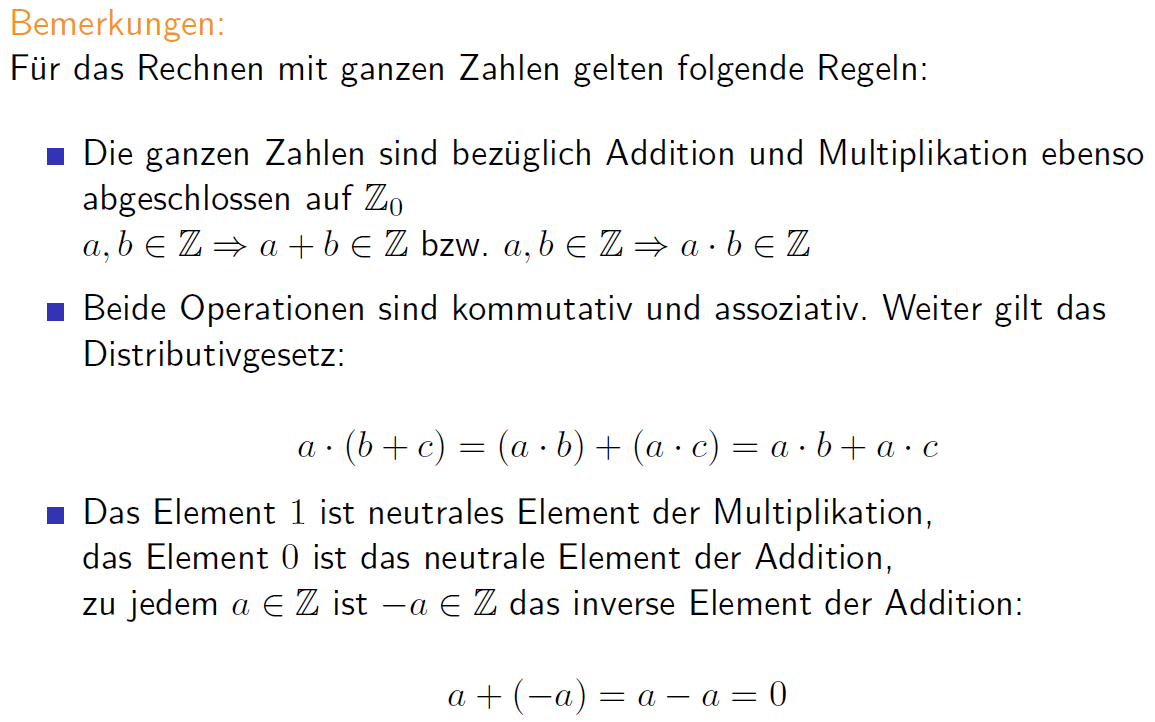
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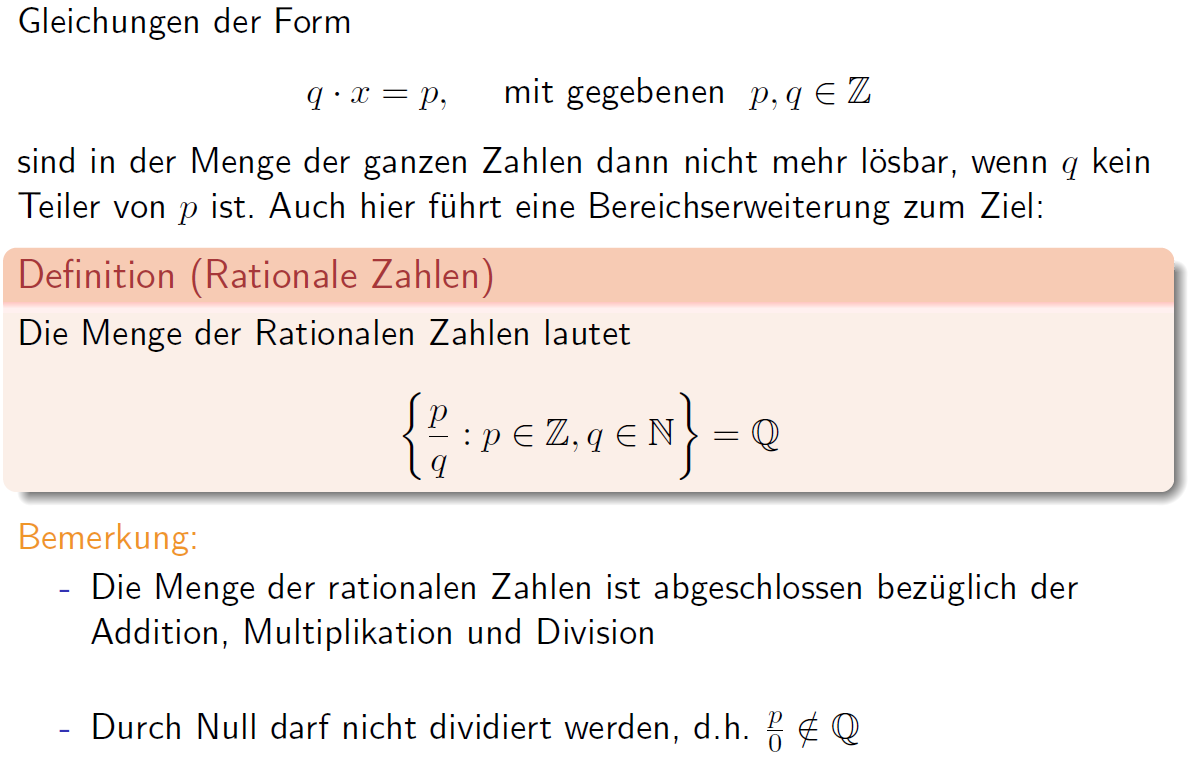


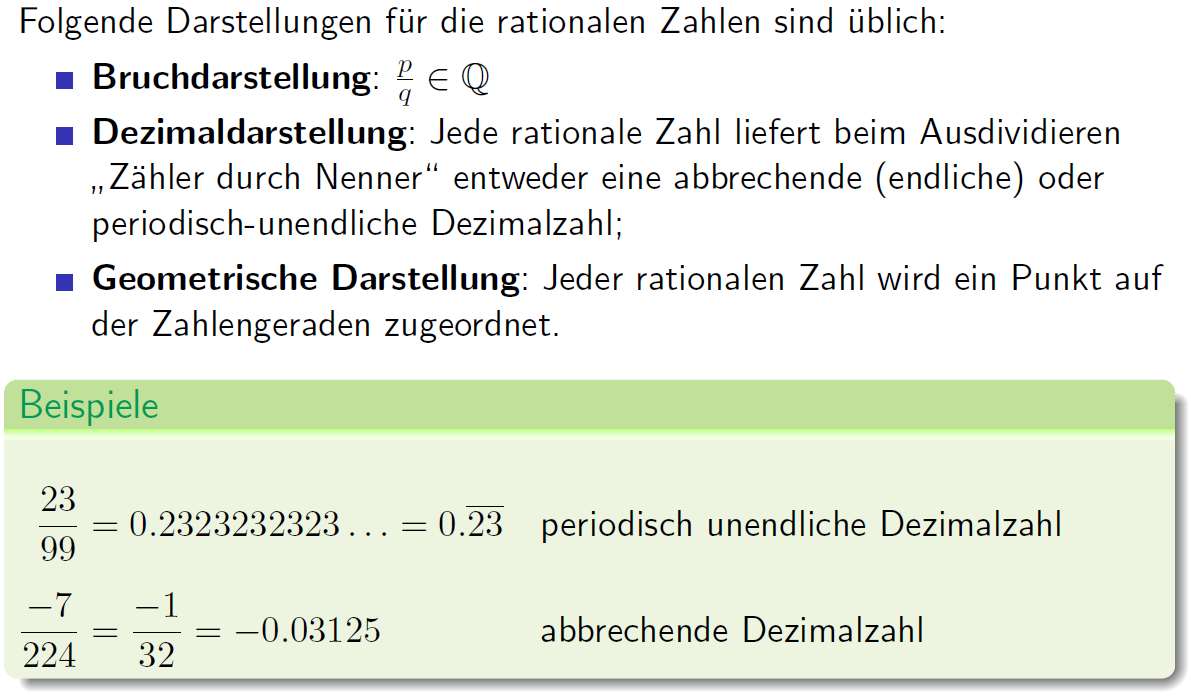
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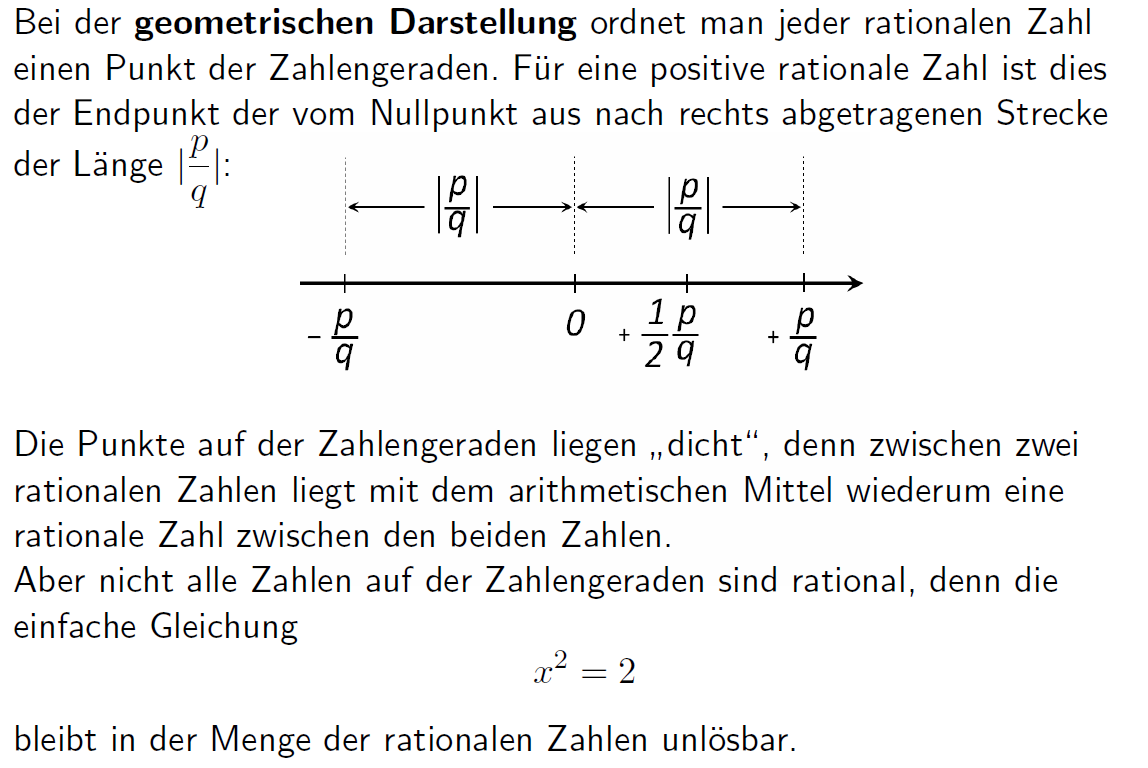




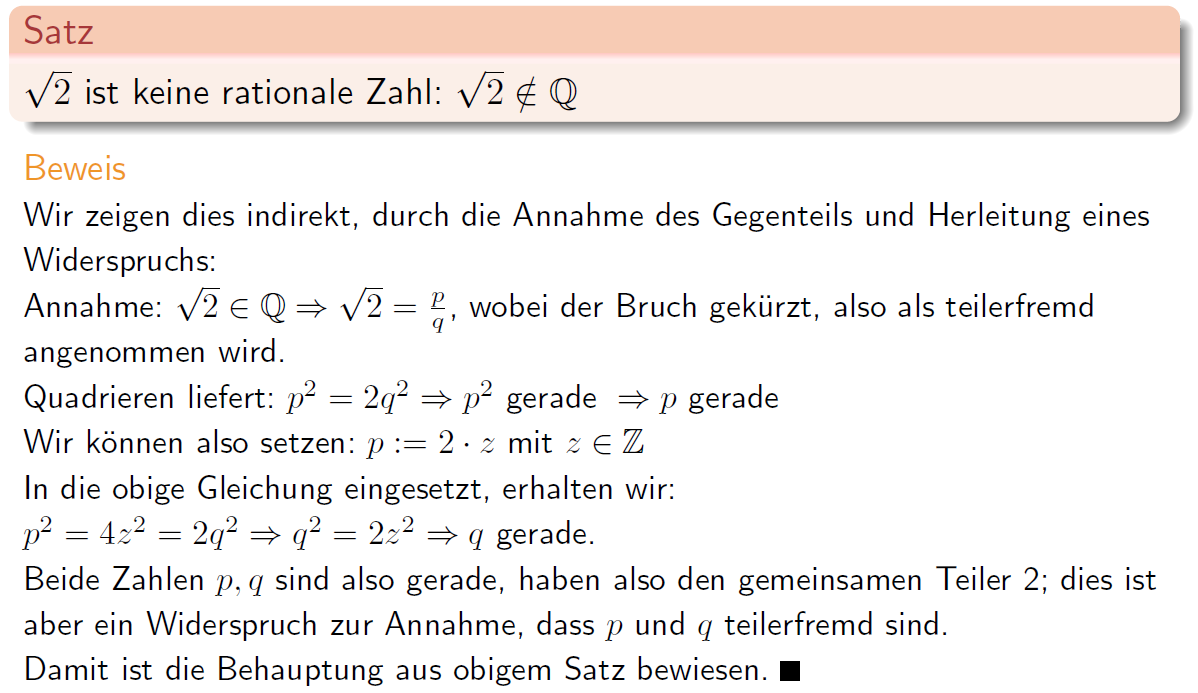
### Rationale Zahlen

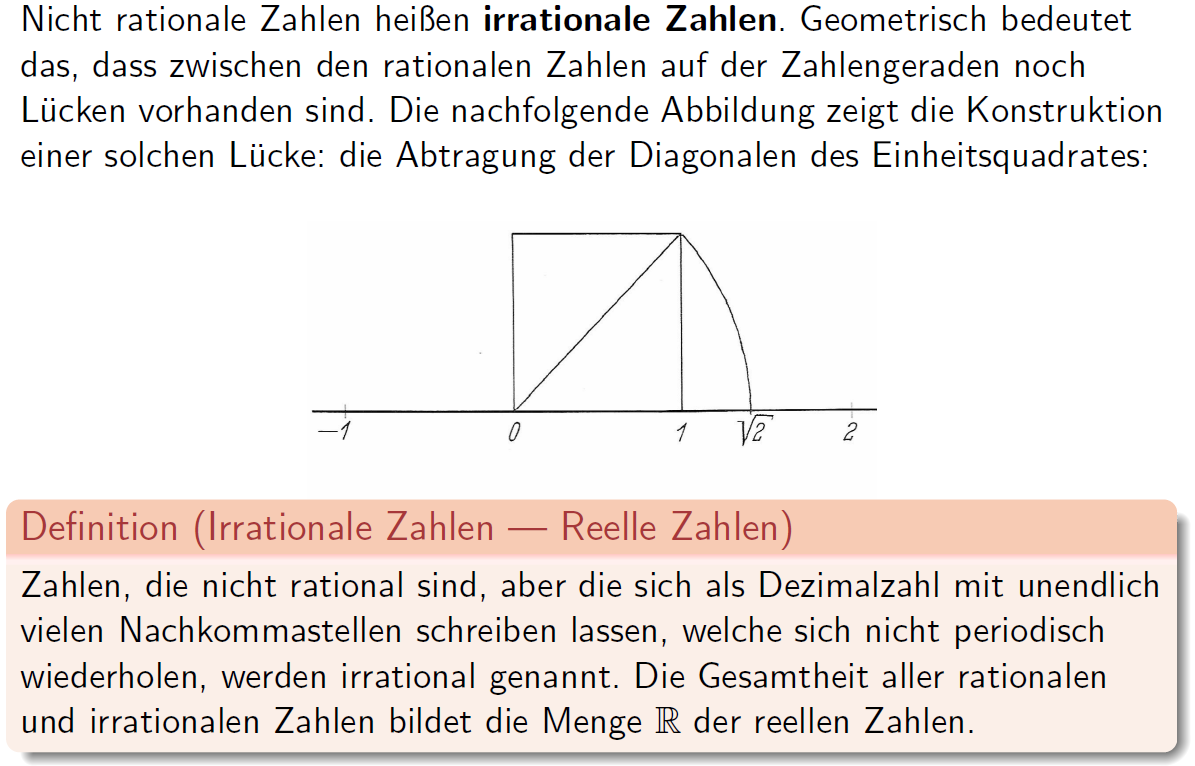


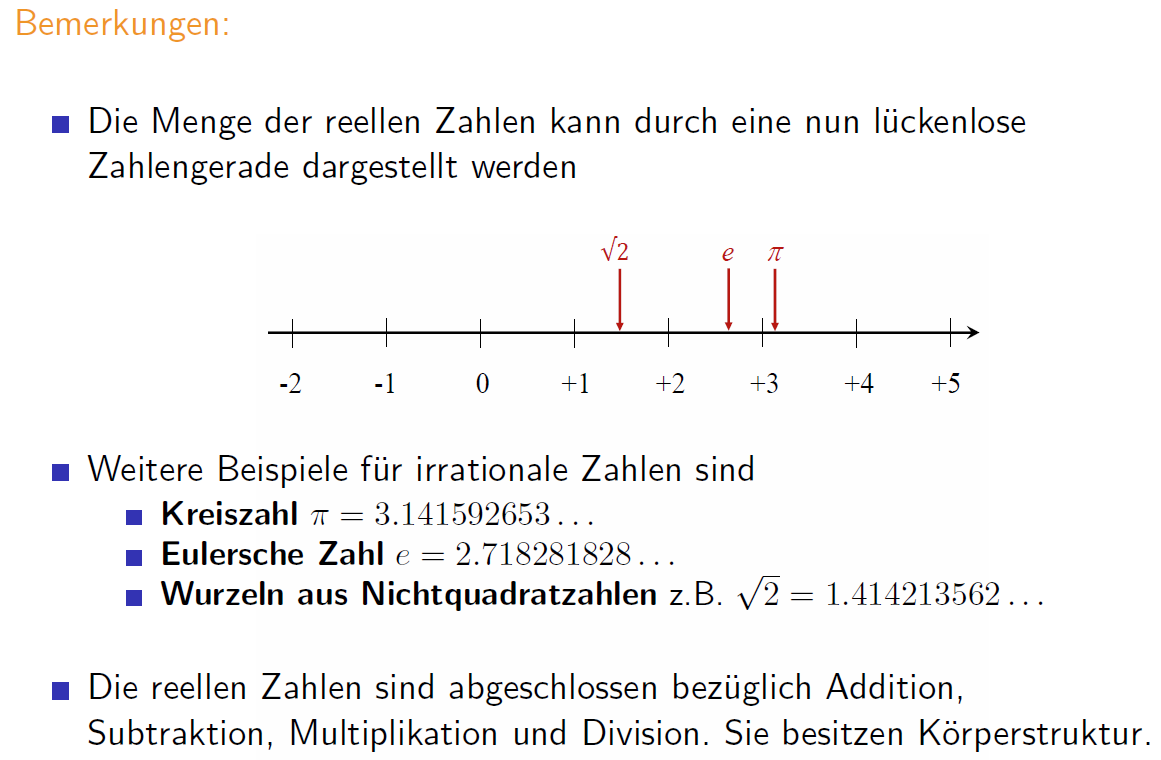


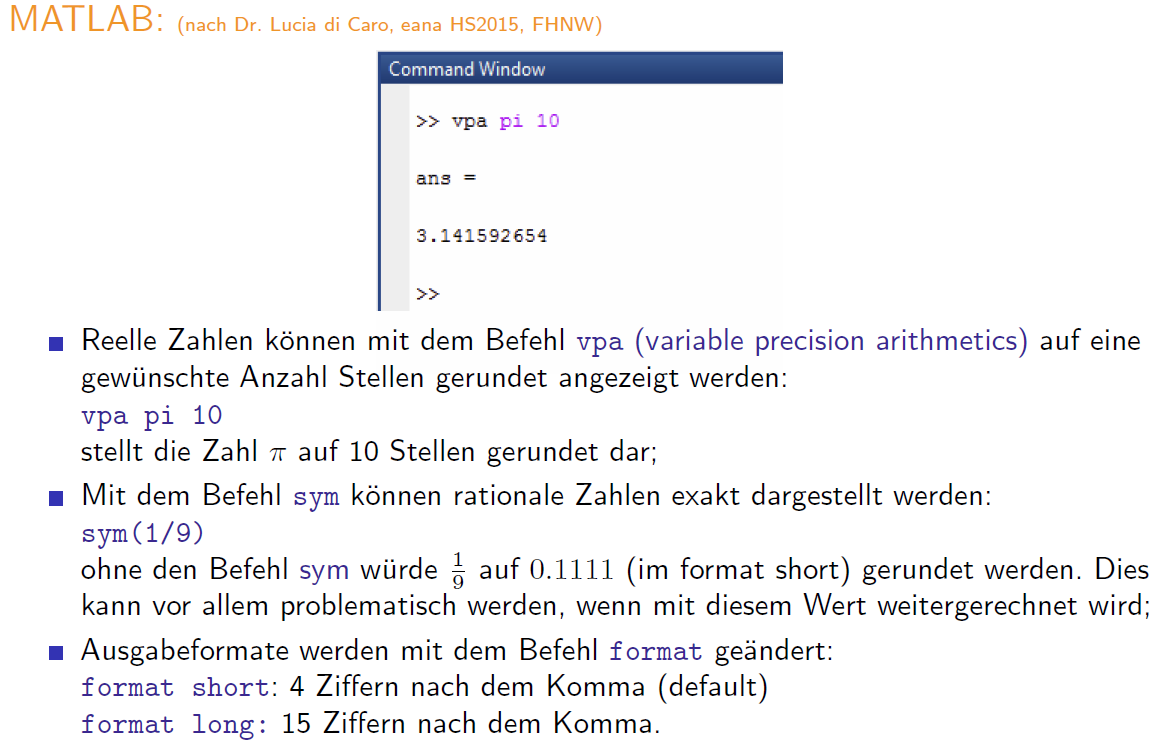


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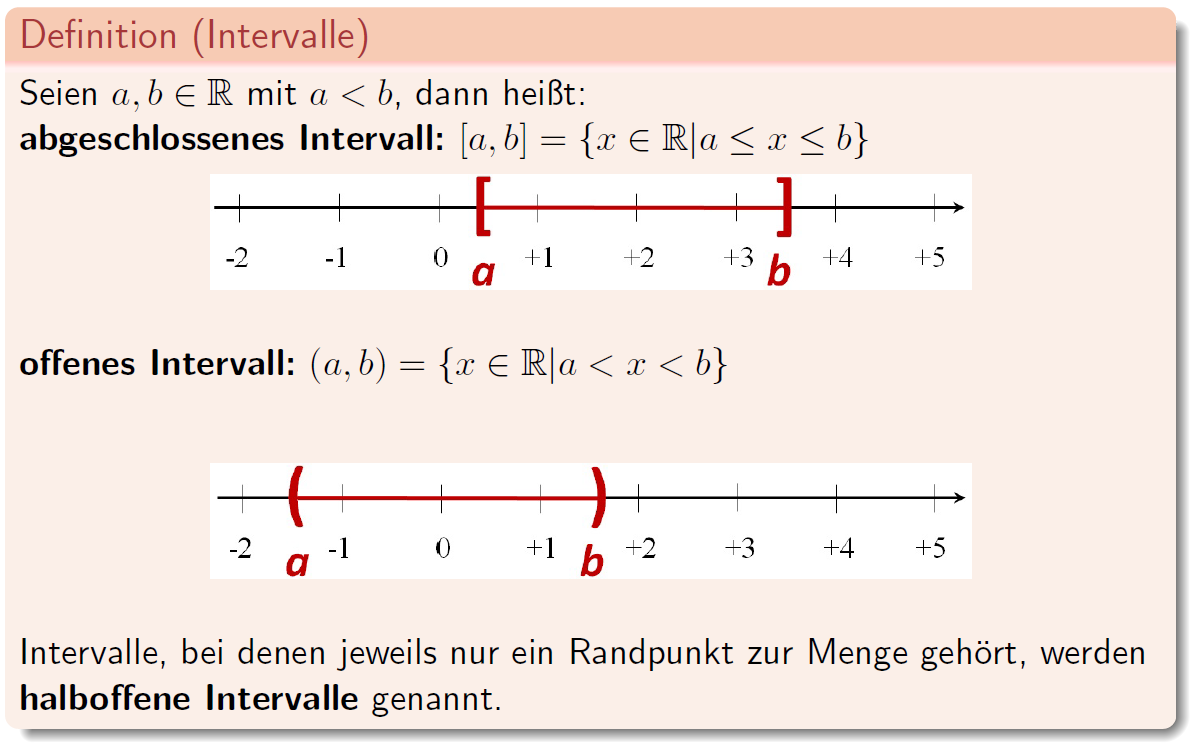


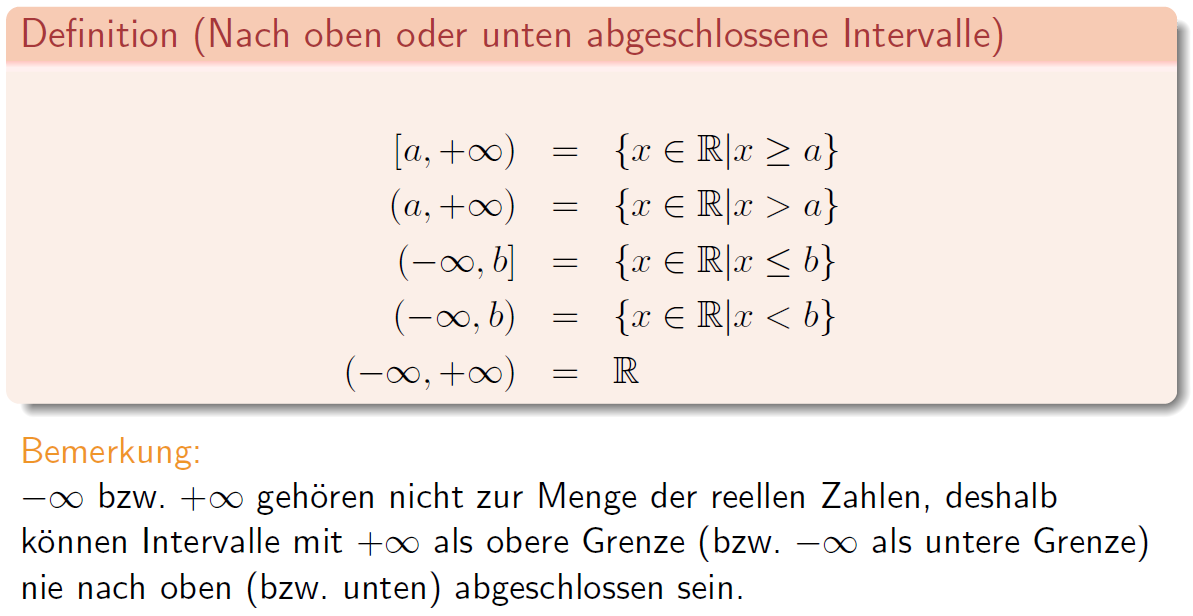




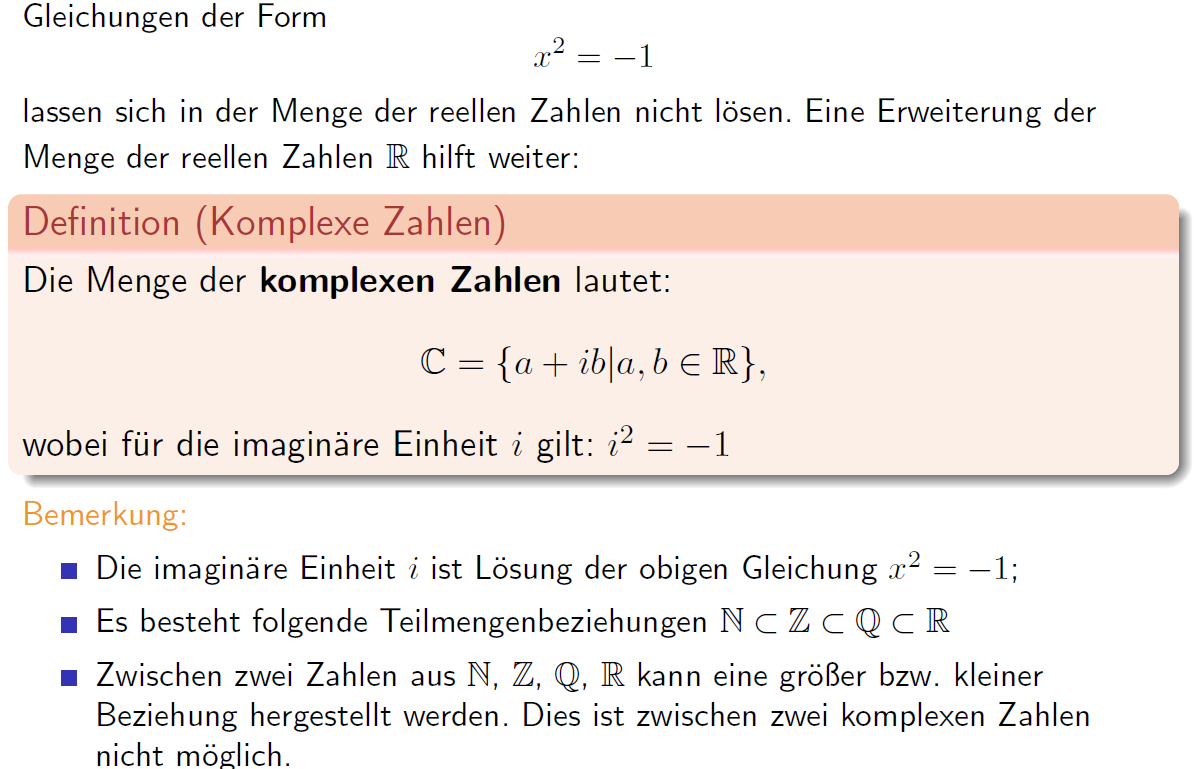


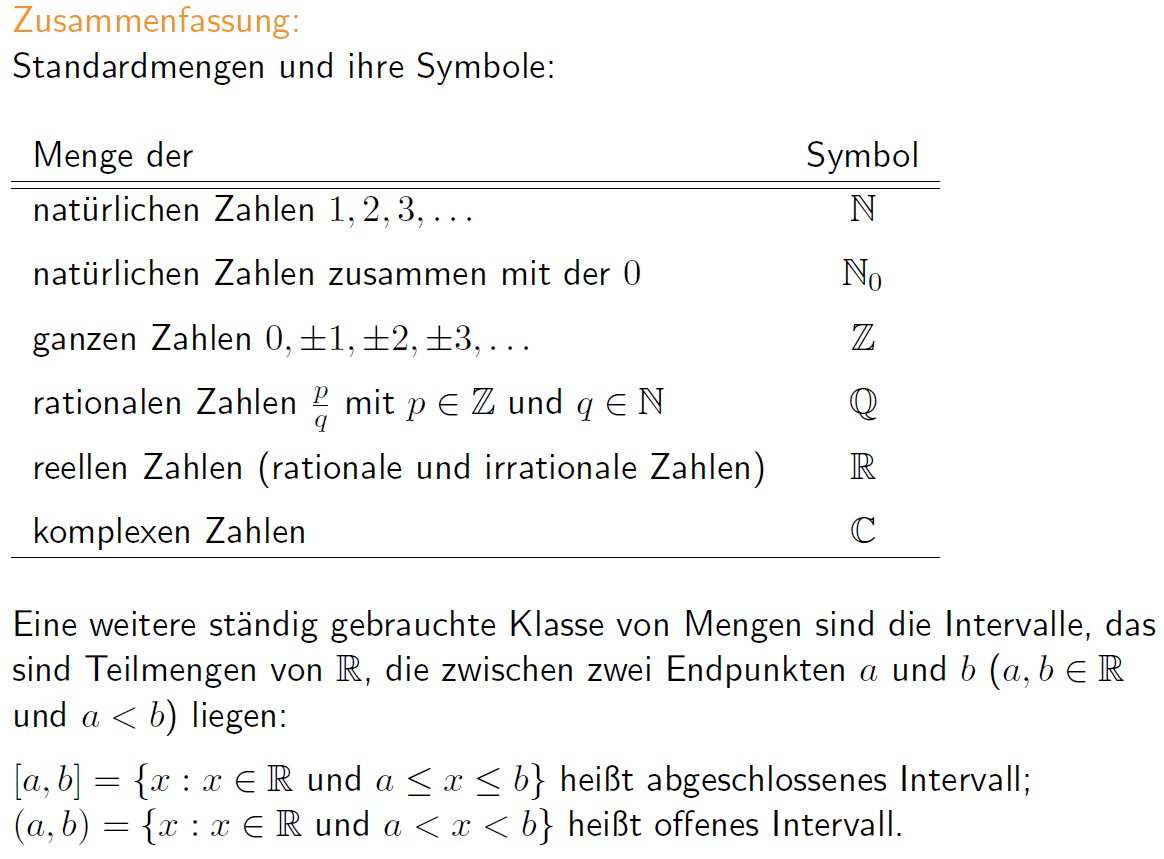
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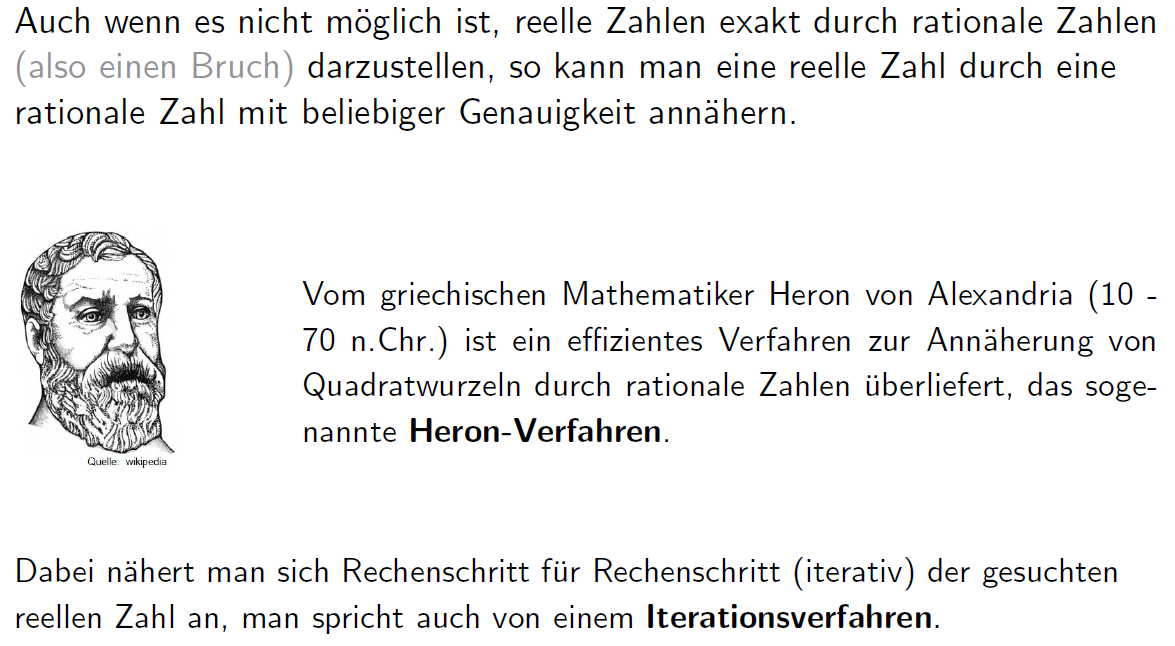


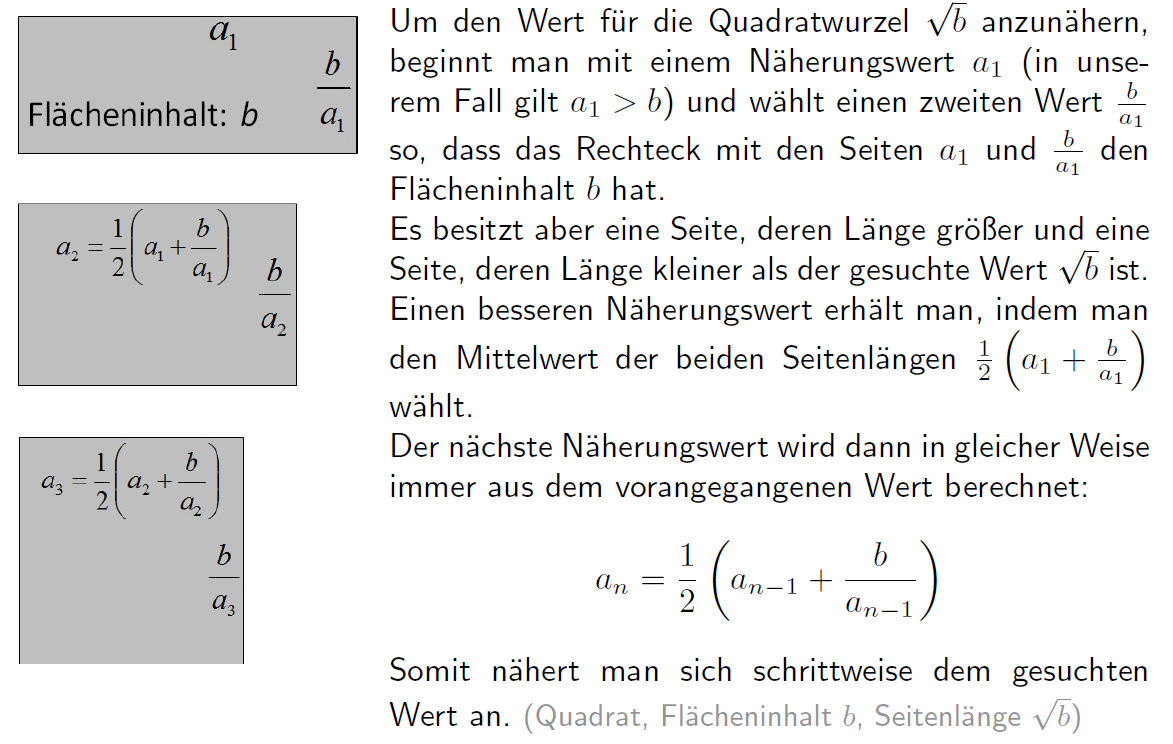
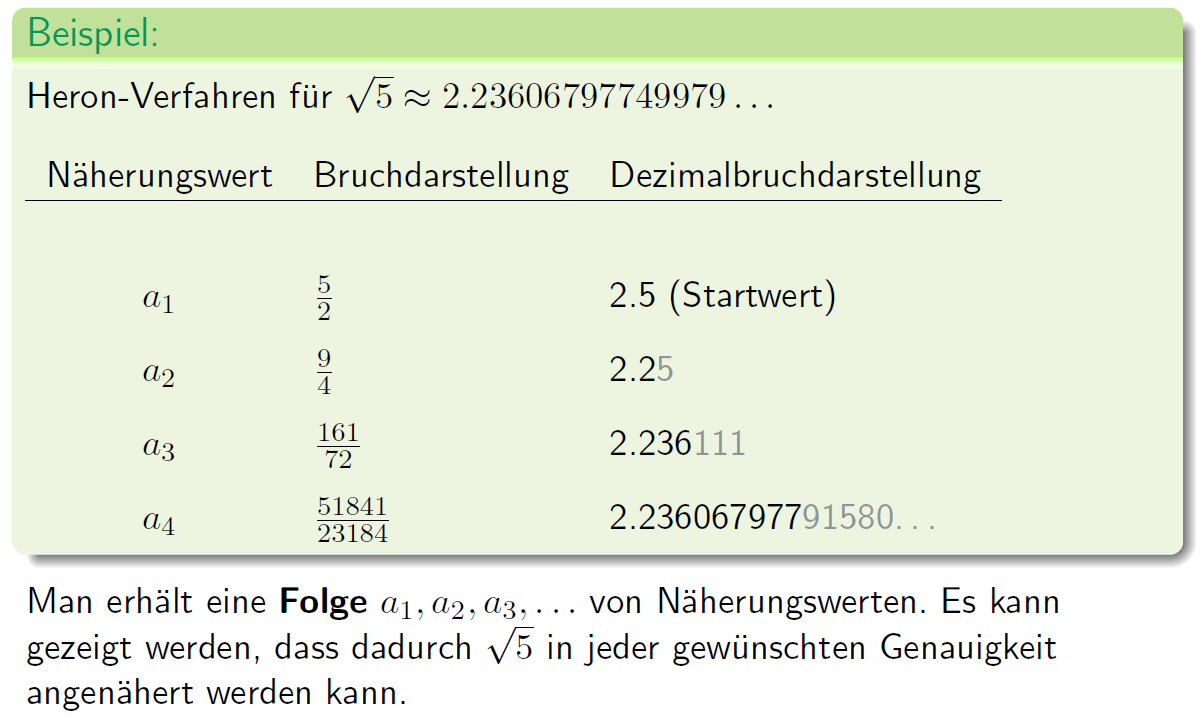
### Komplexe Zahlen





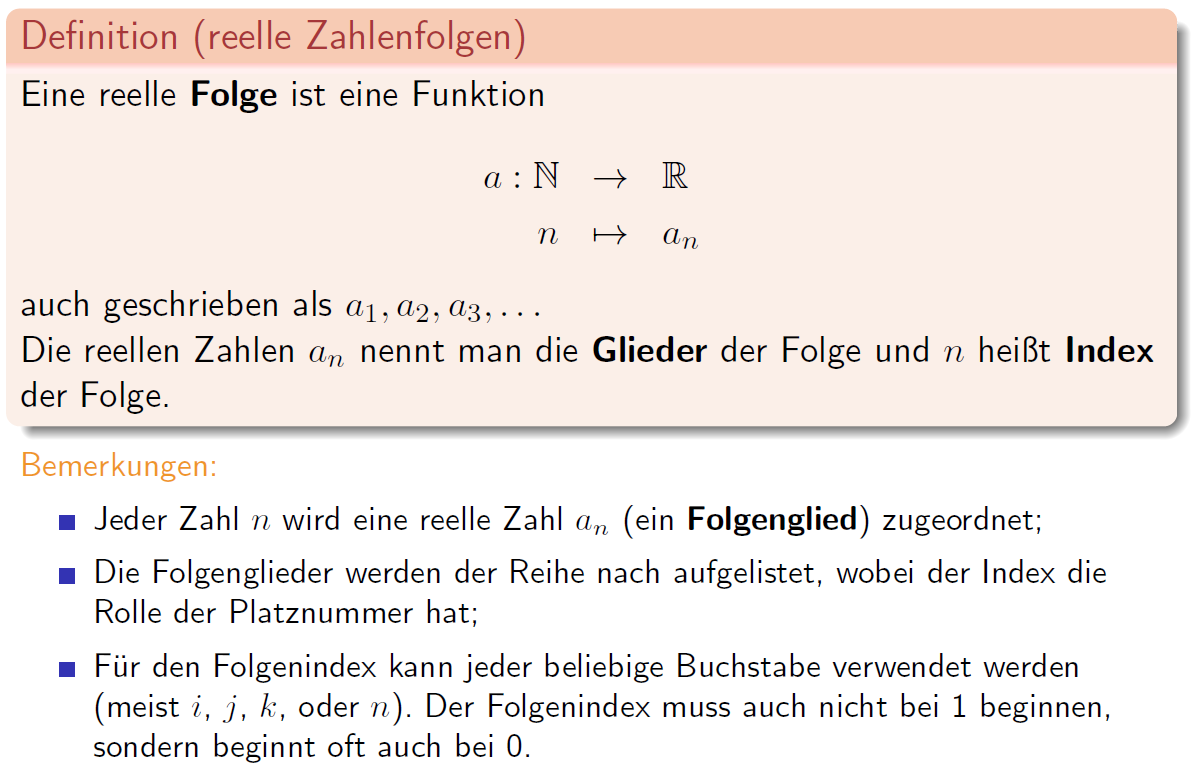
## Heron Verfahren



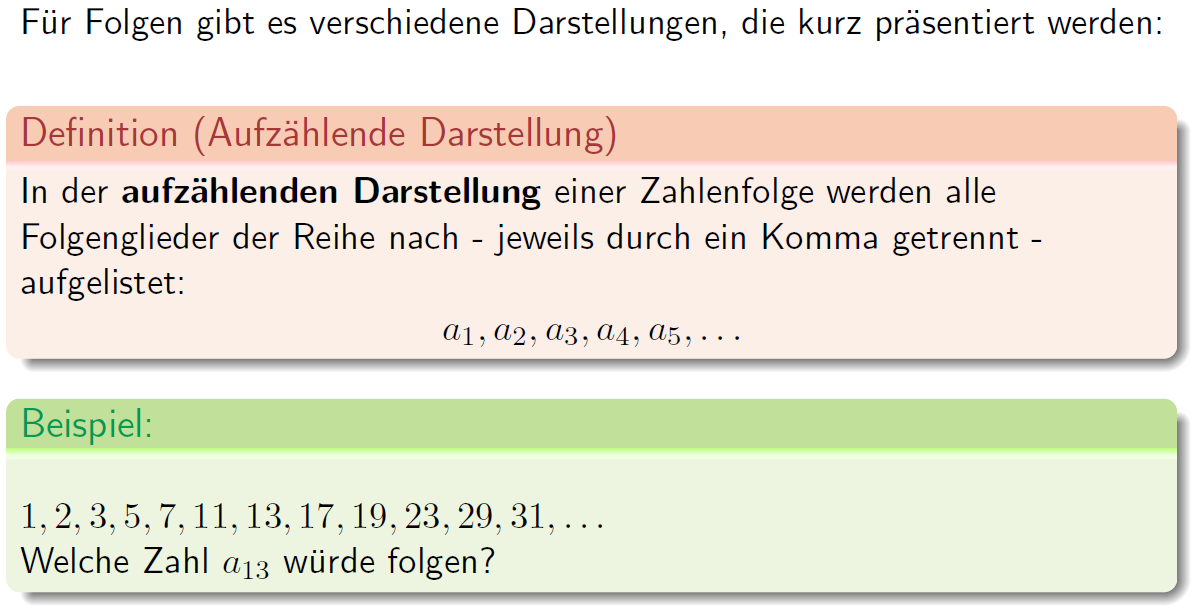
 

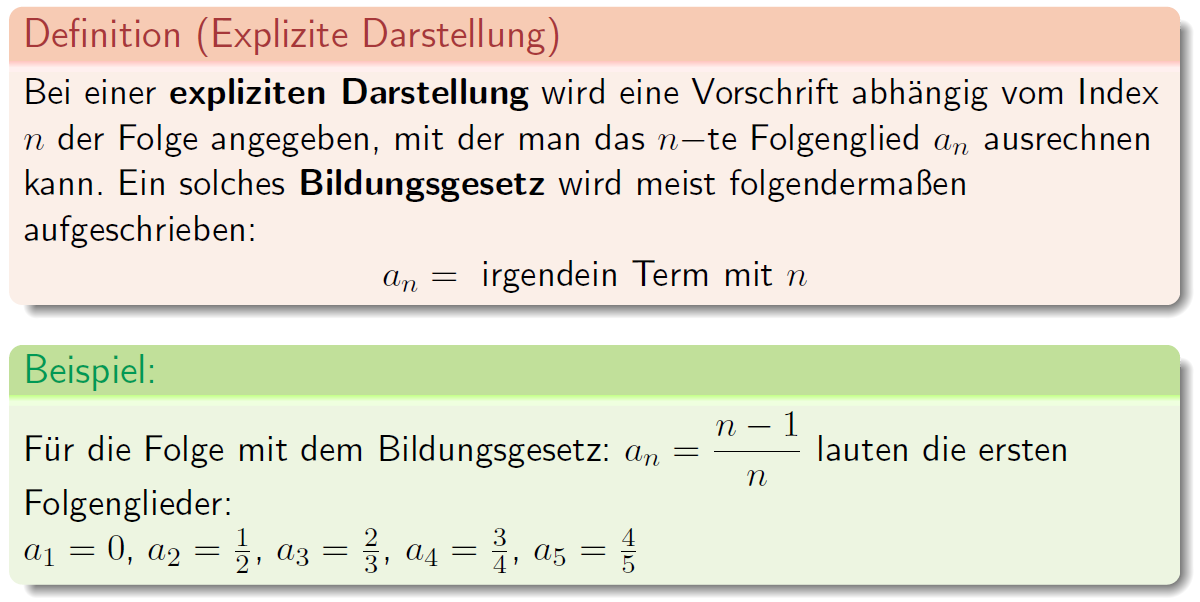
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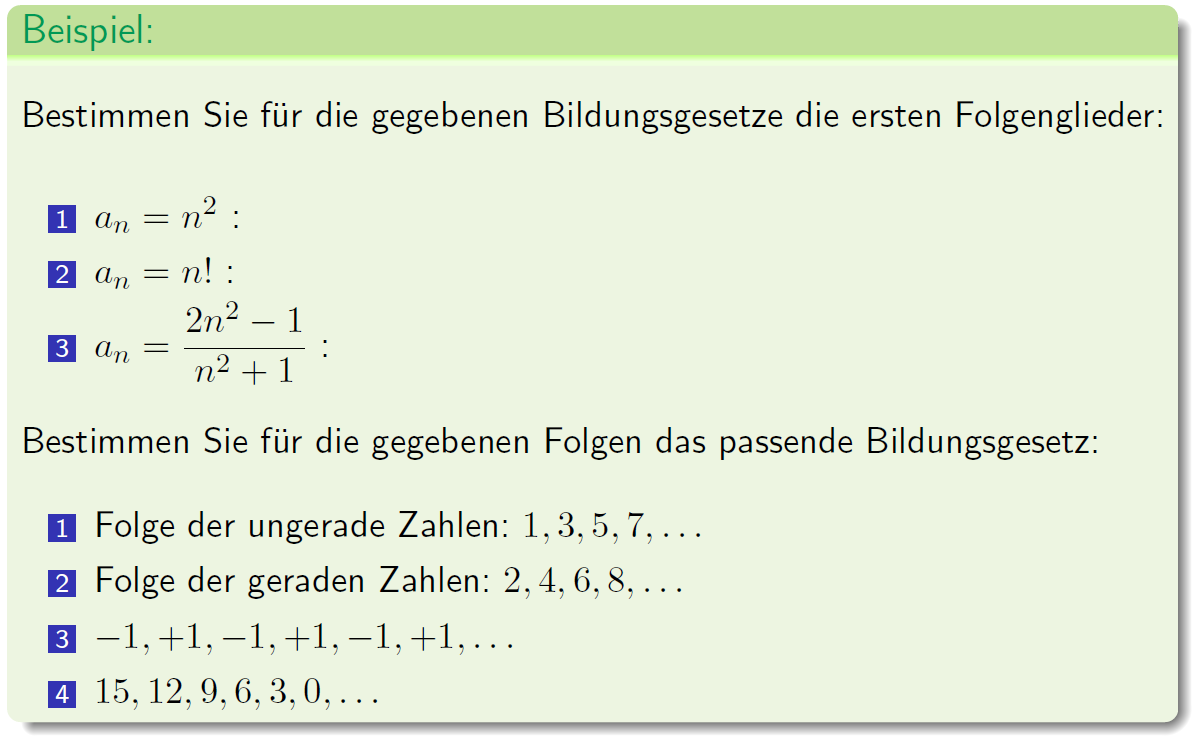
## Zahlenfolgen

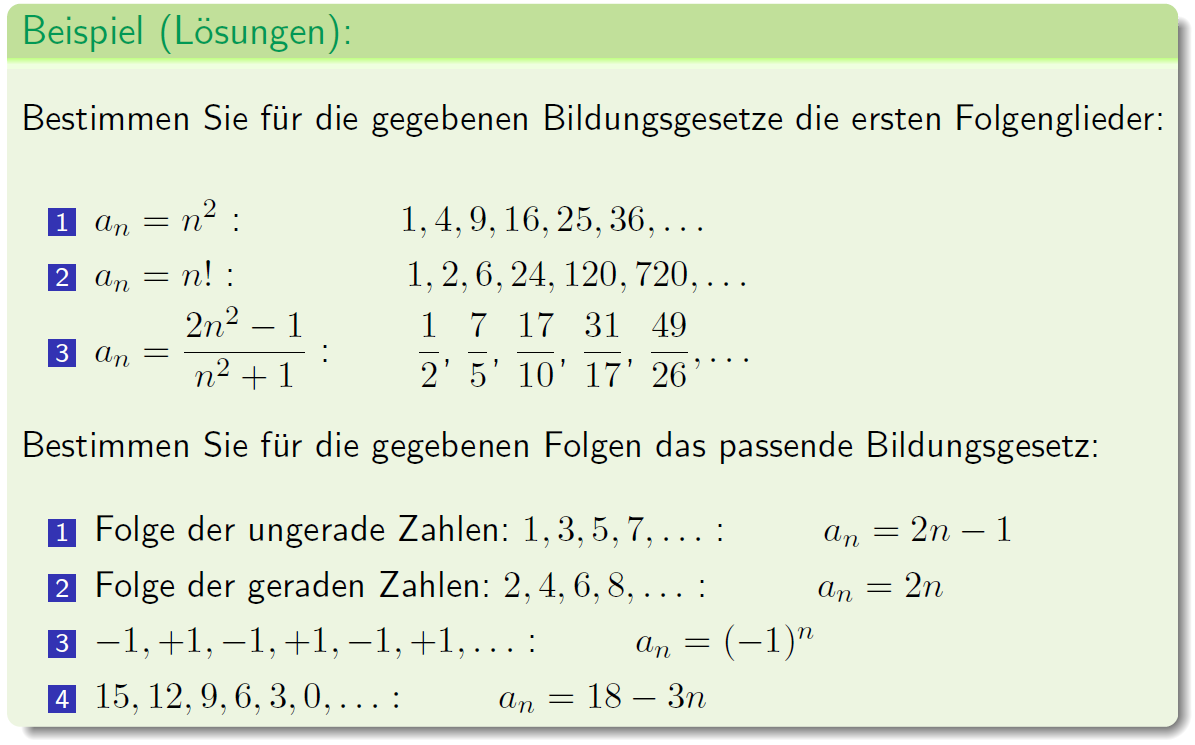


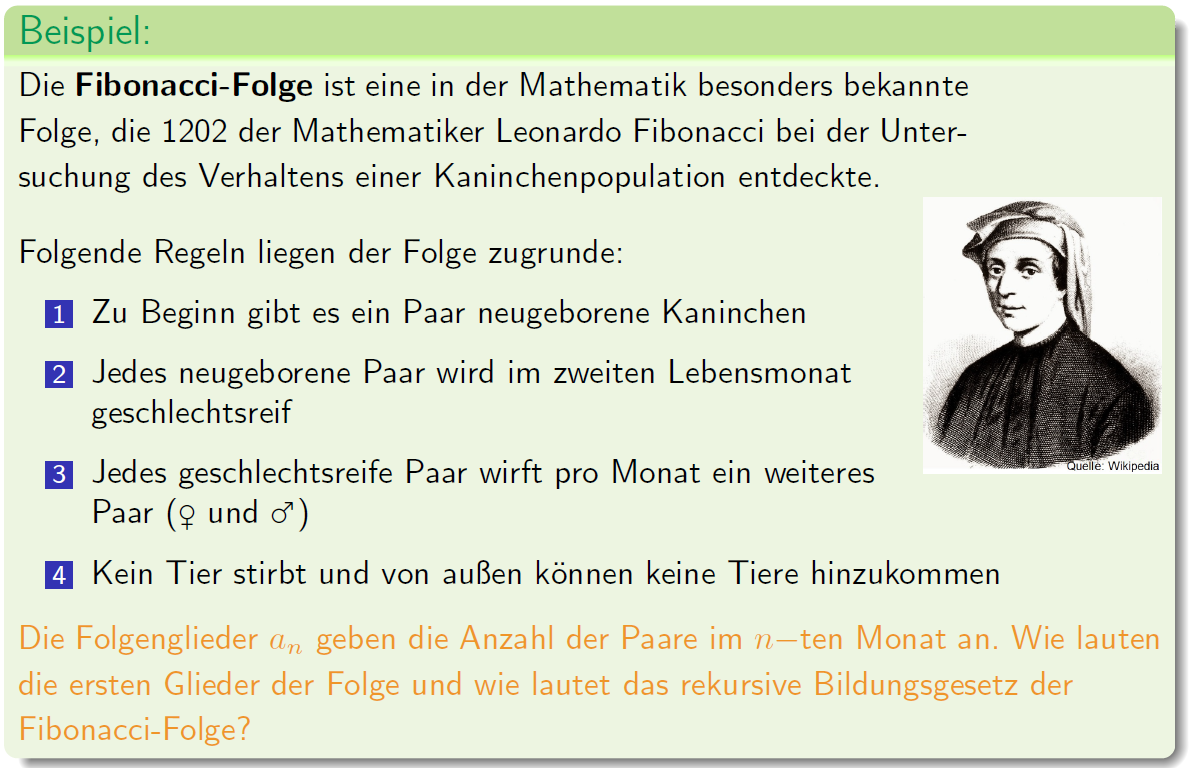
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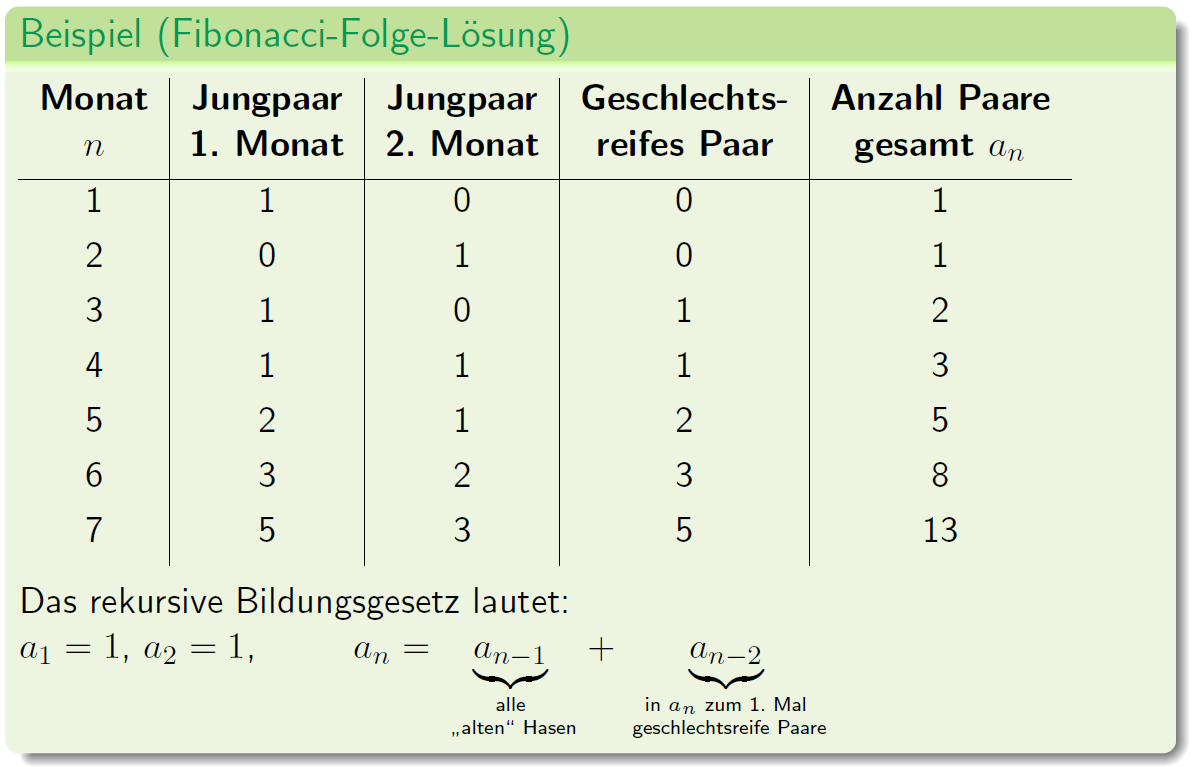


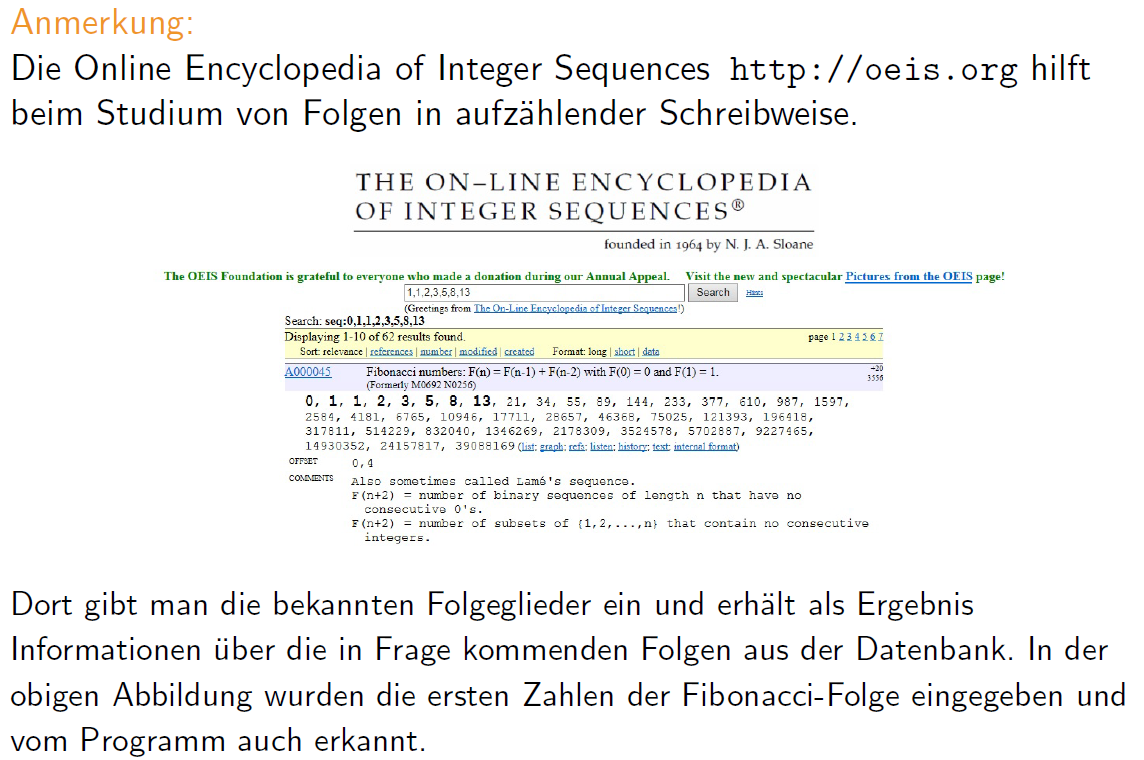


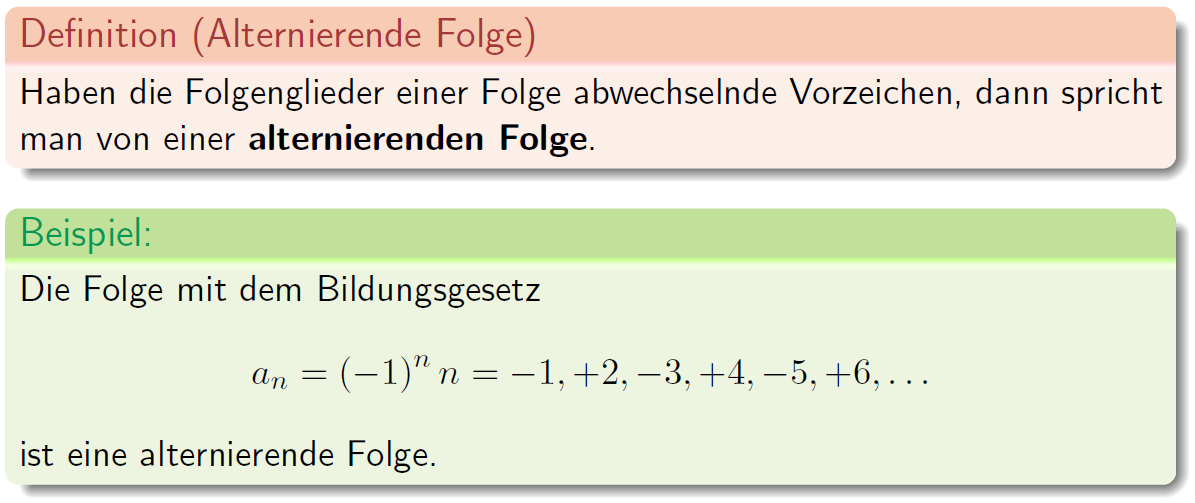


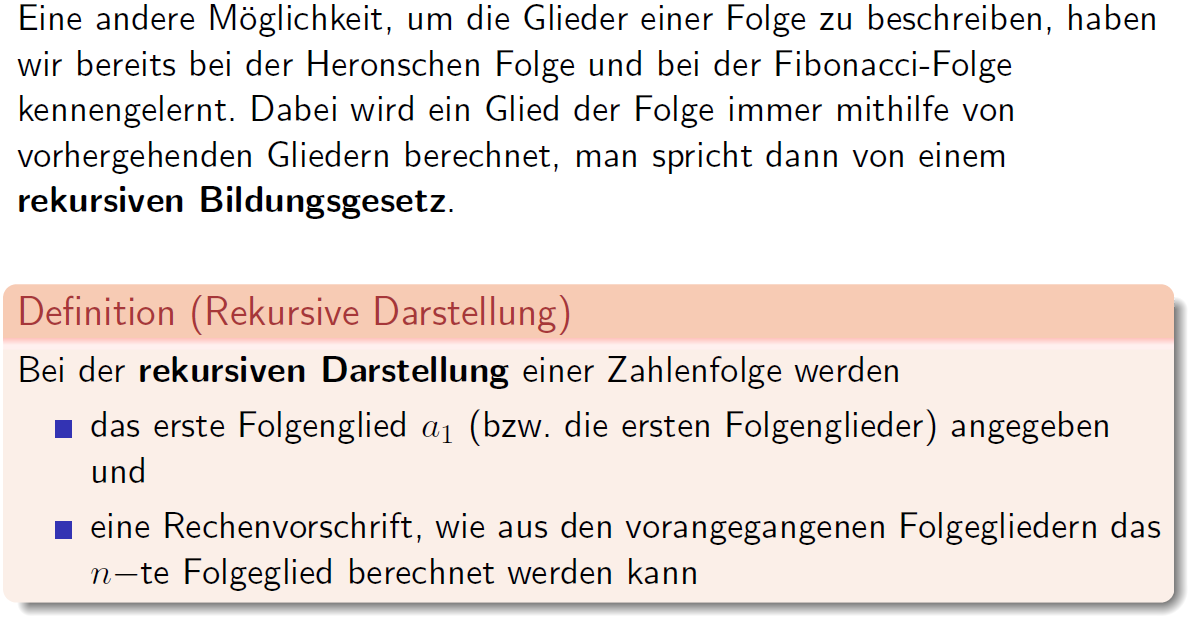




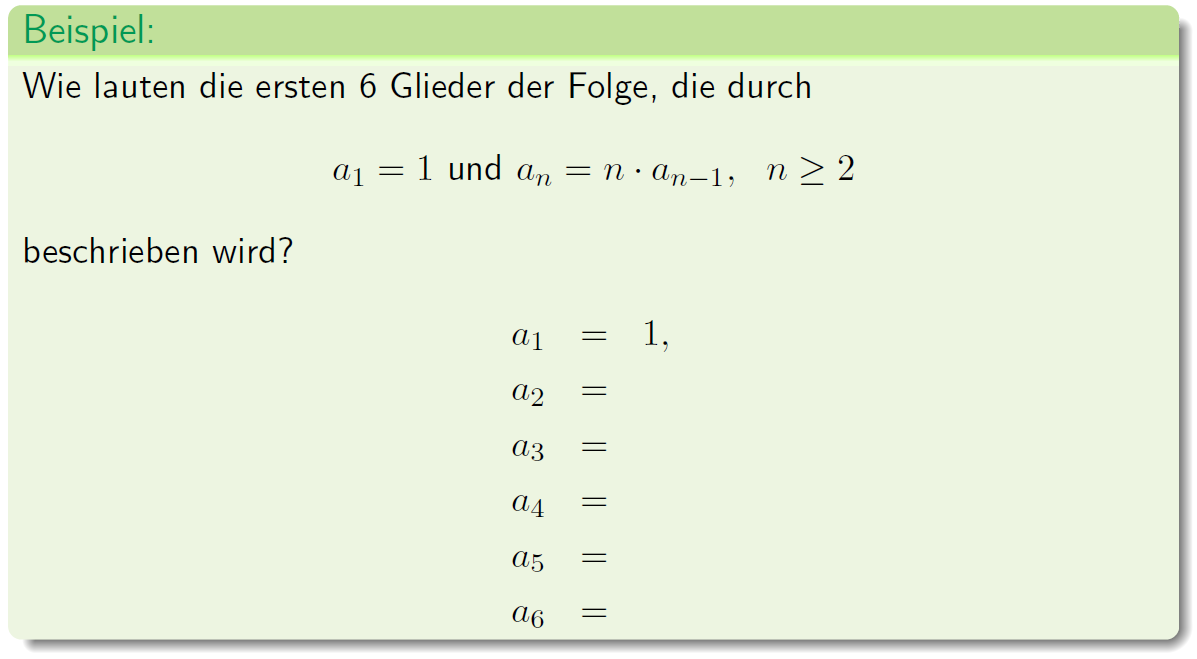


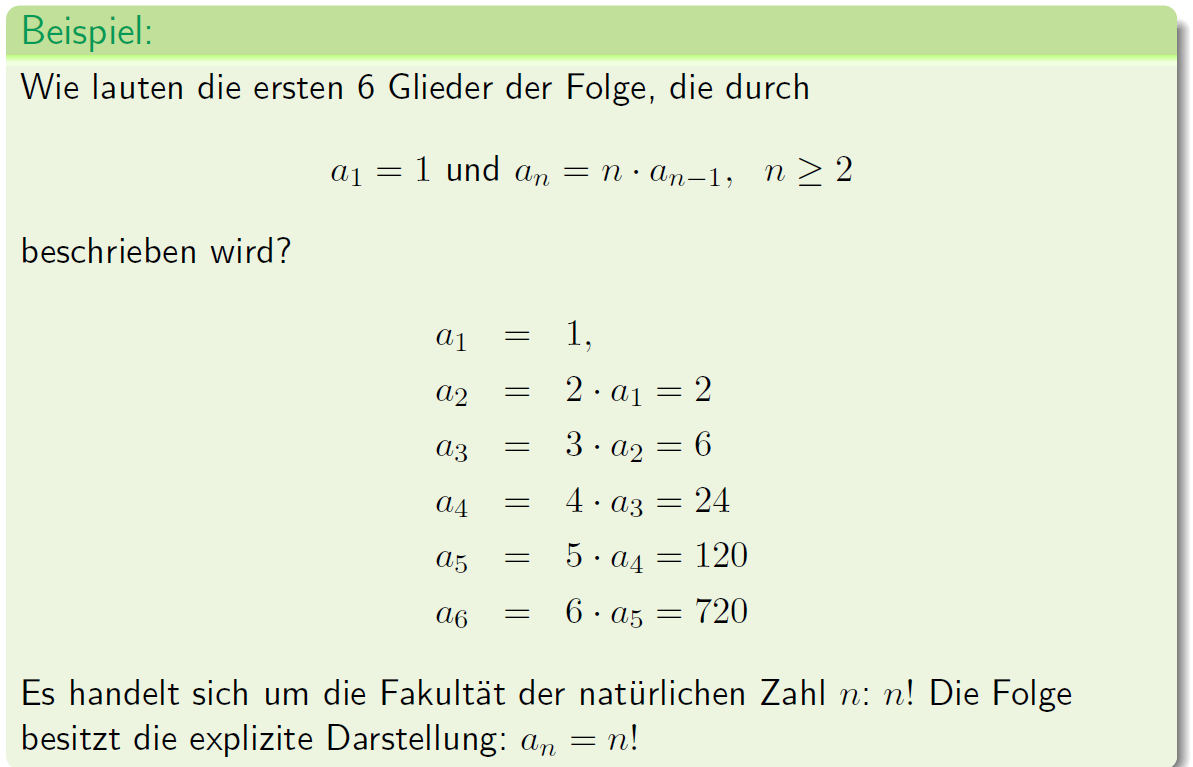






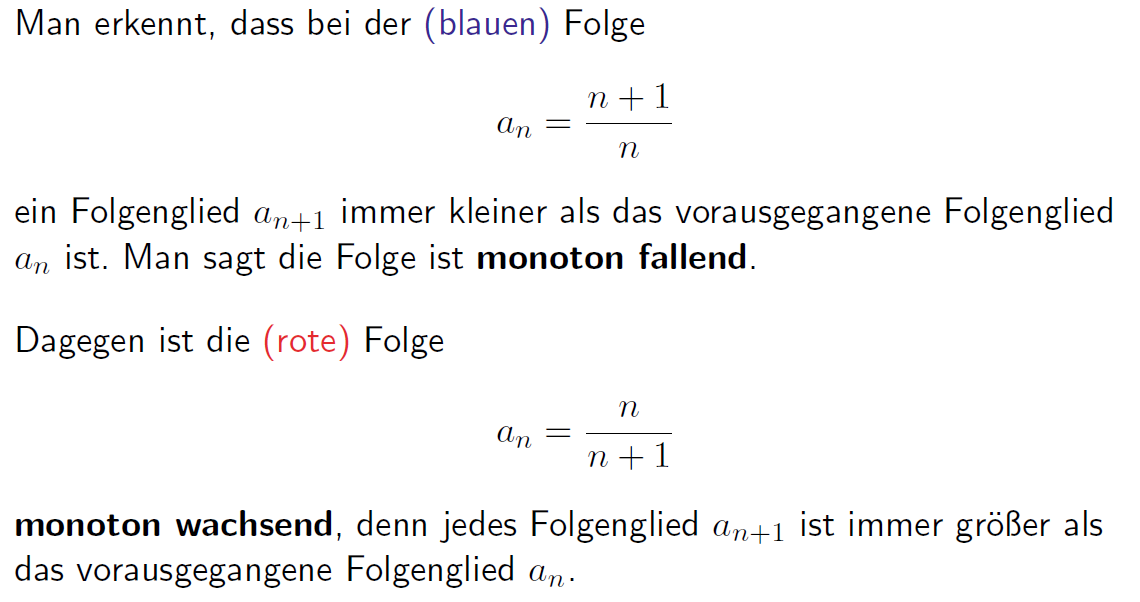


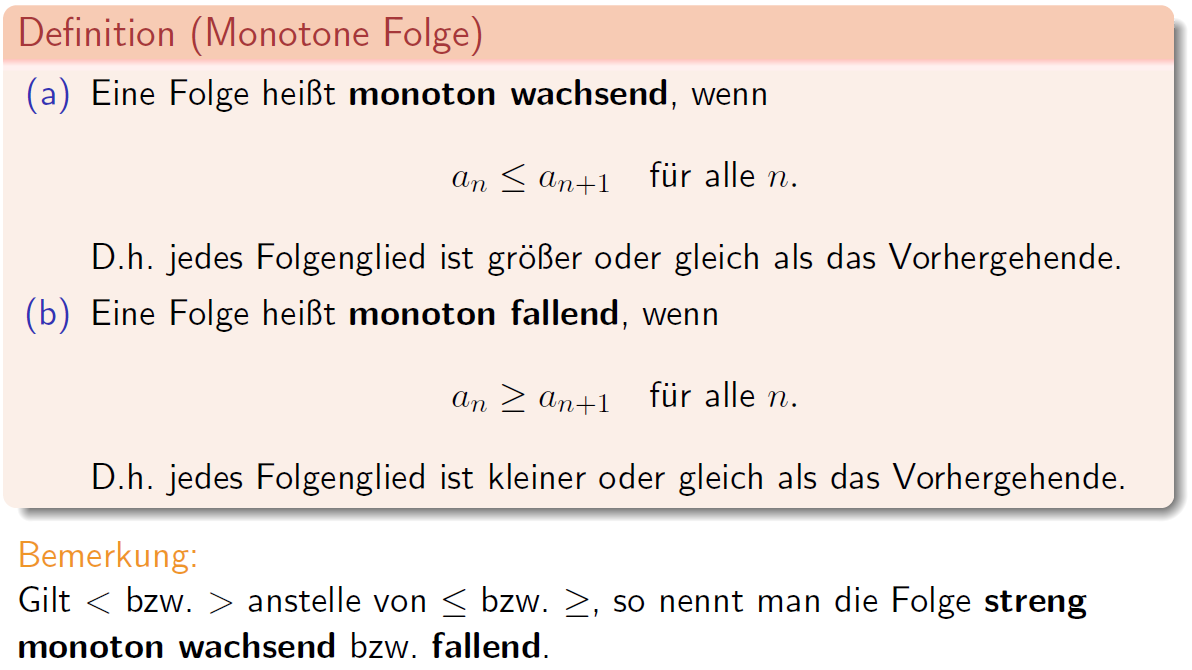


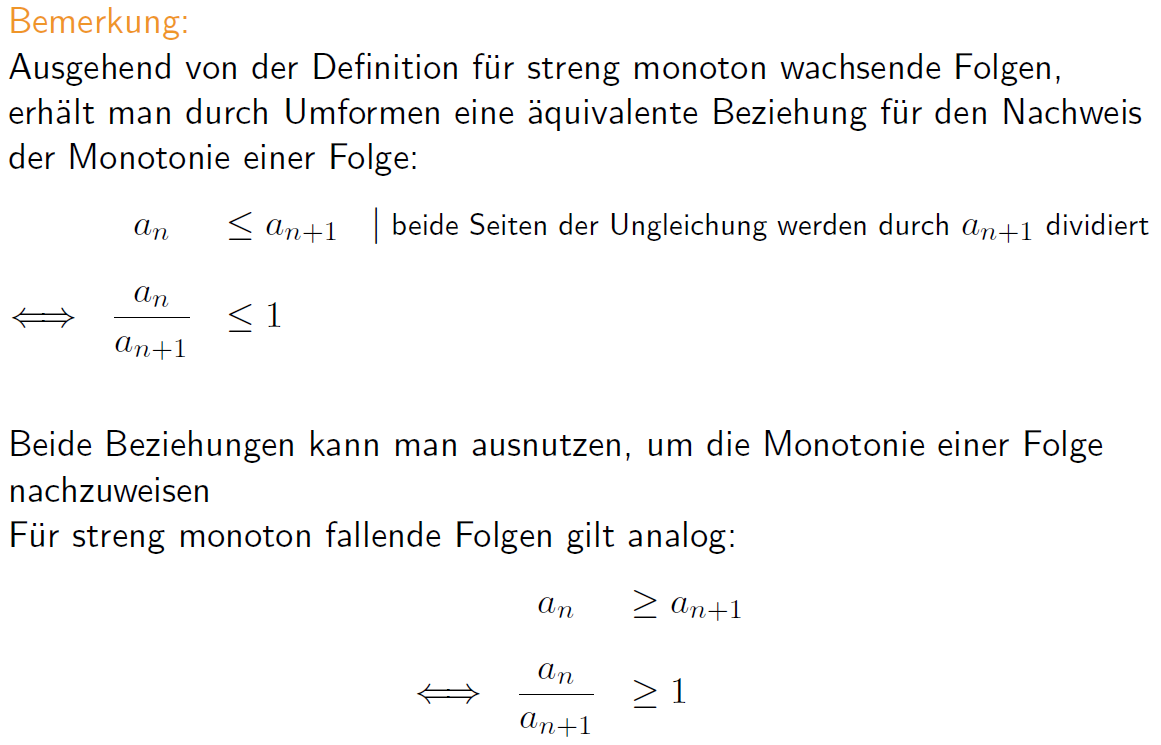


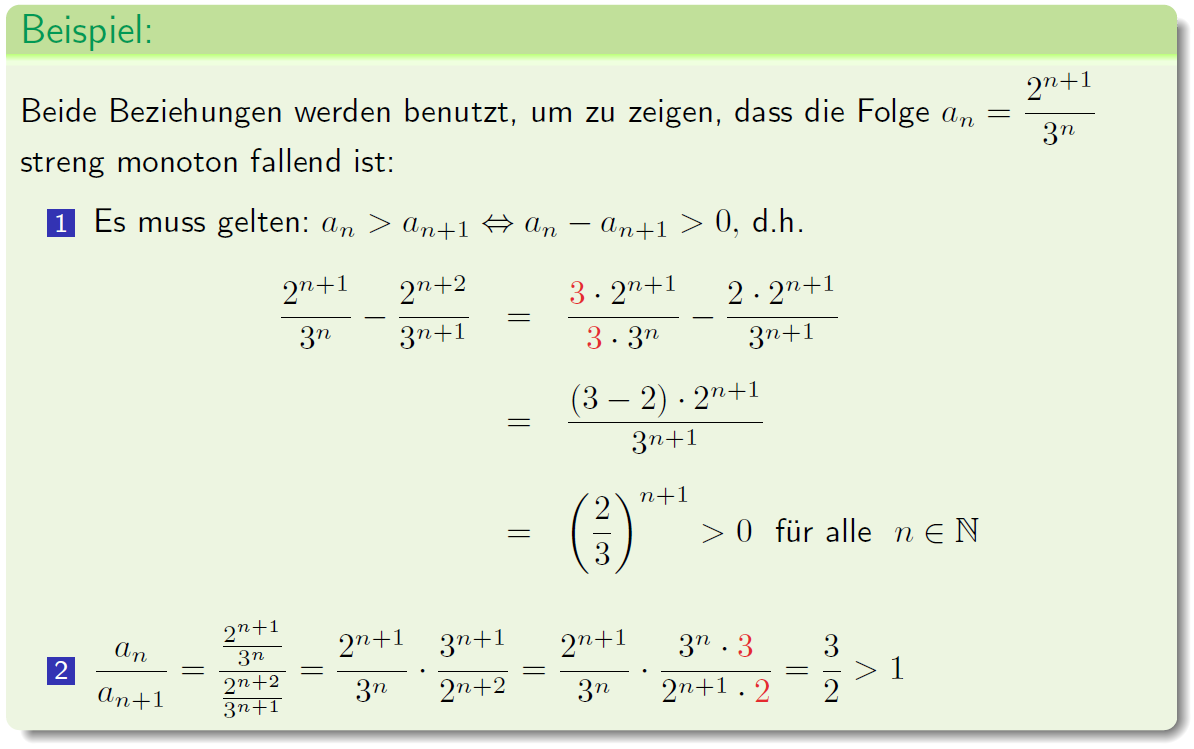
## Monotonie



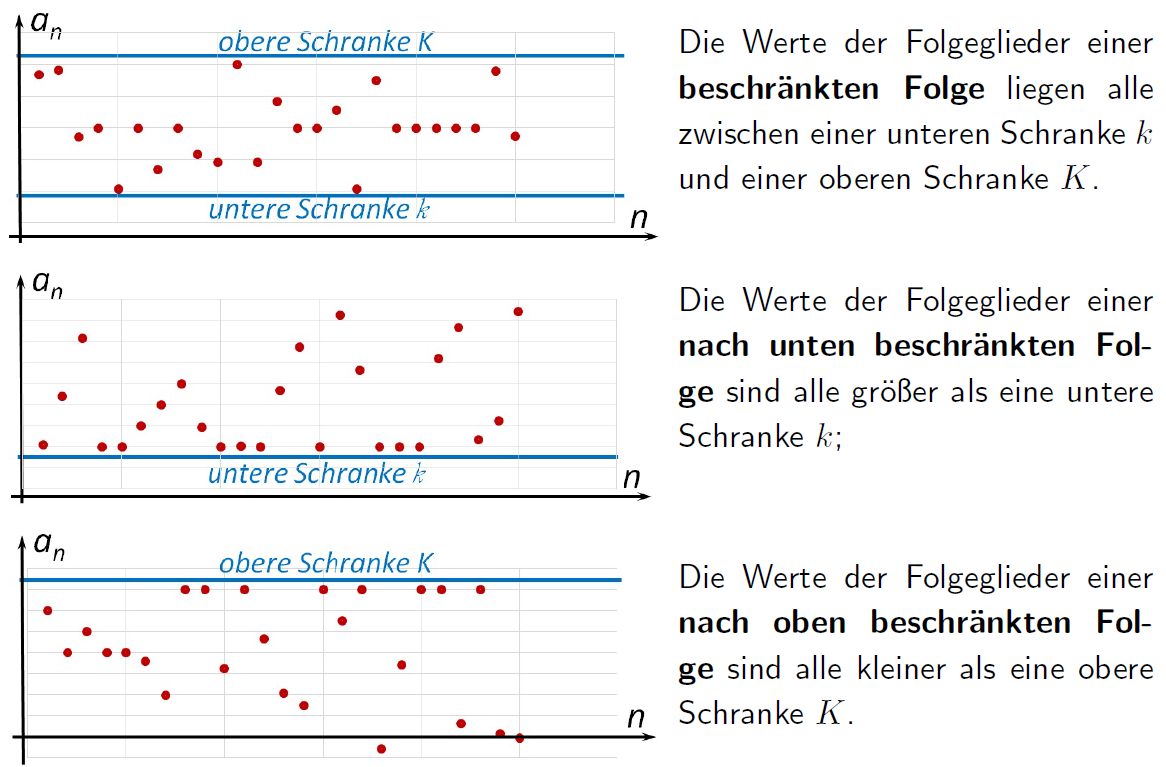


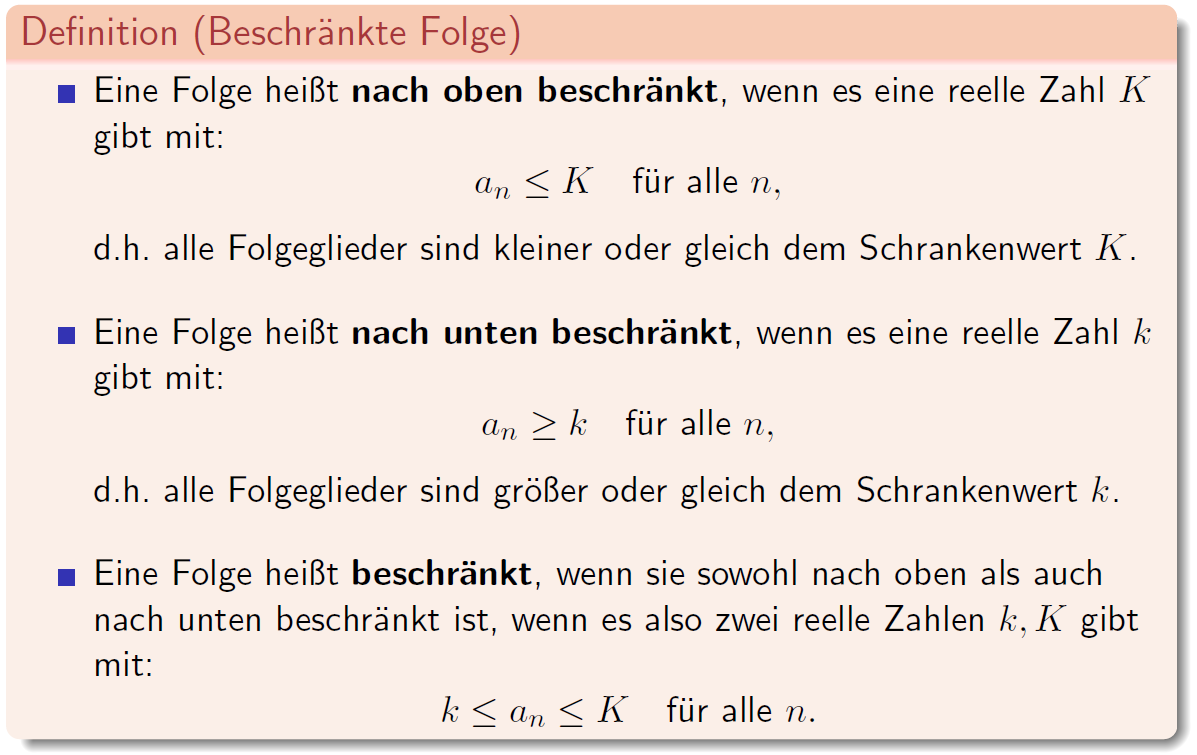


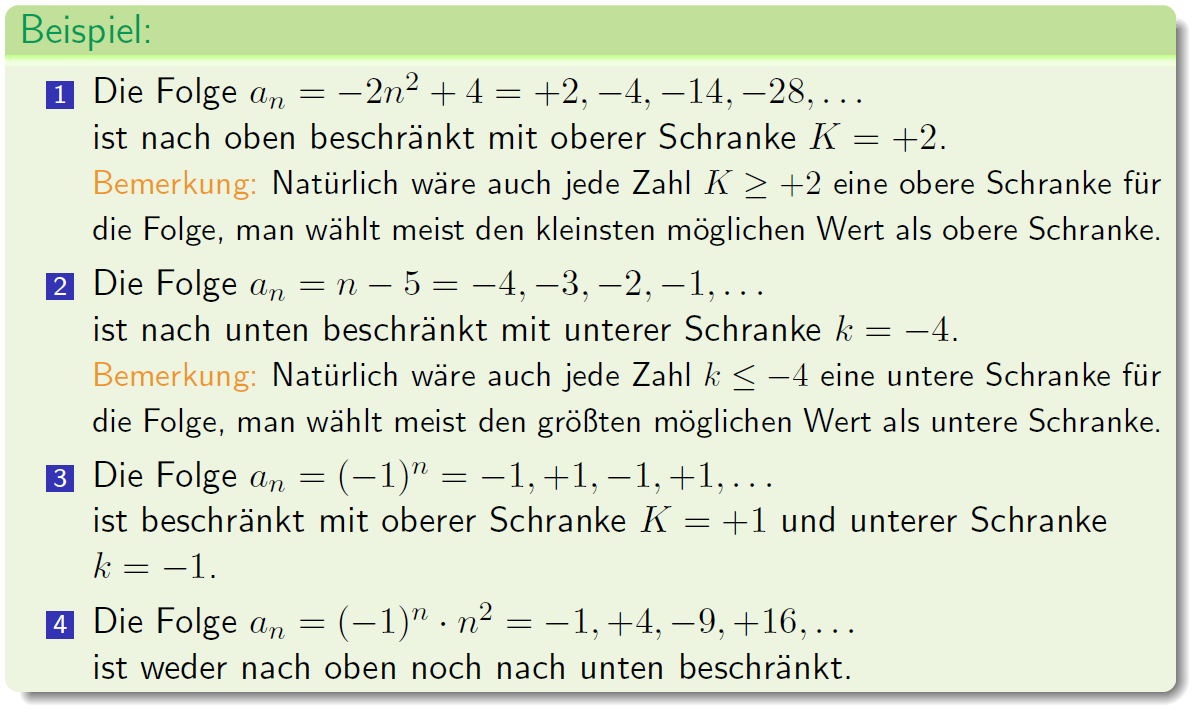




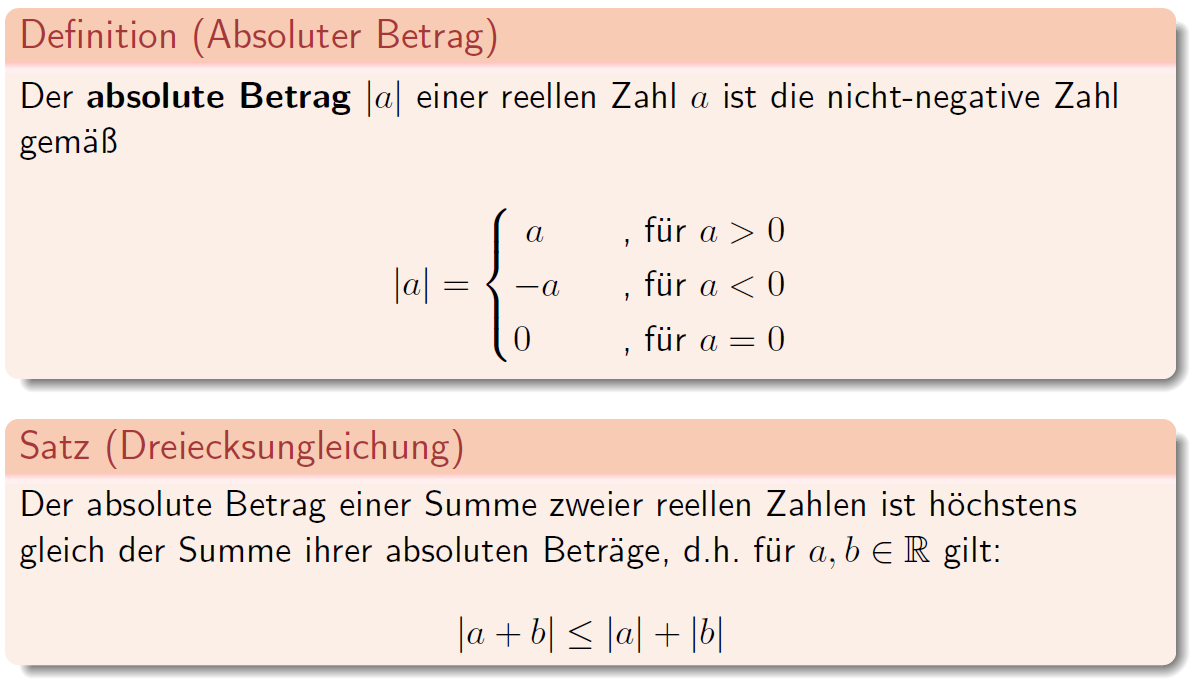
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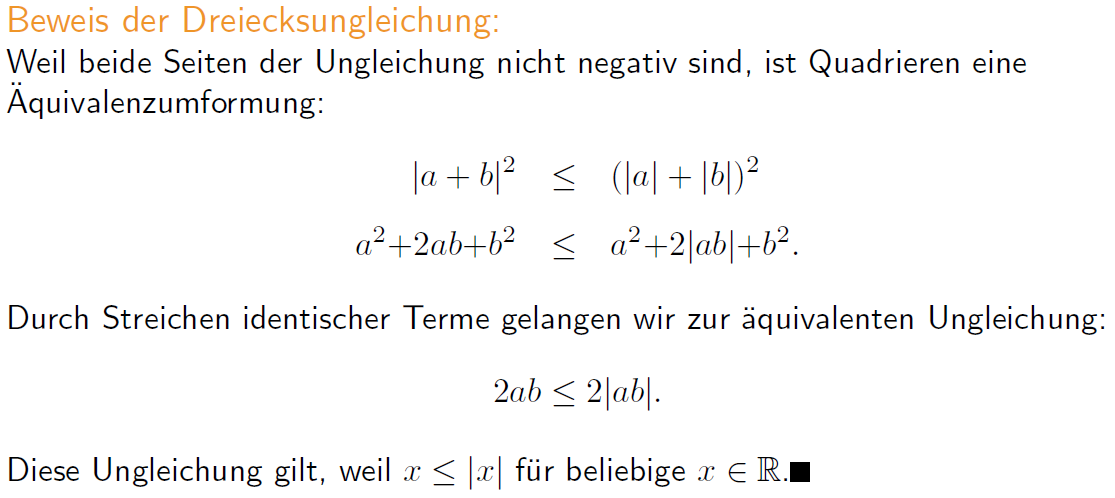


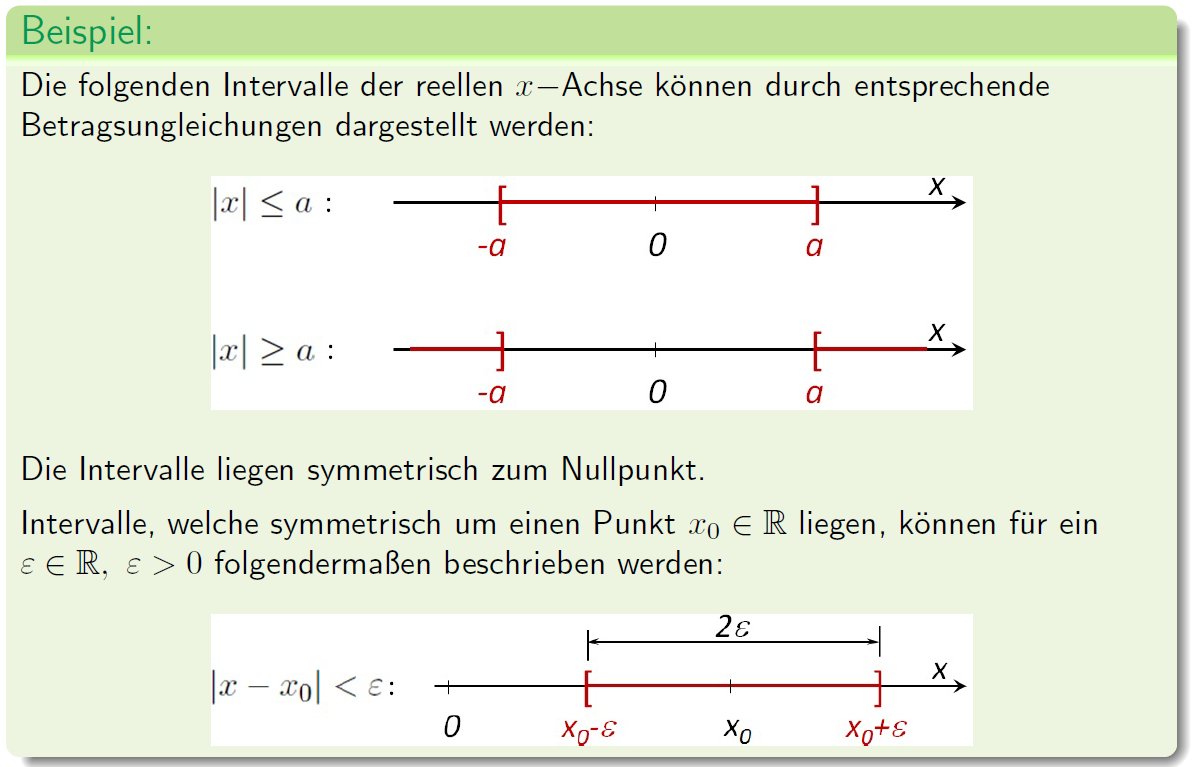




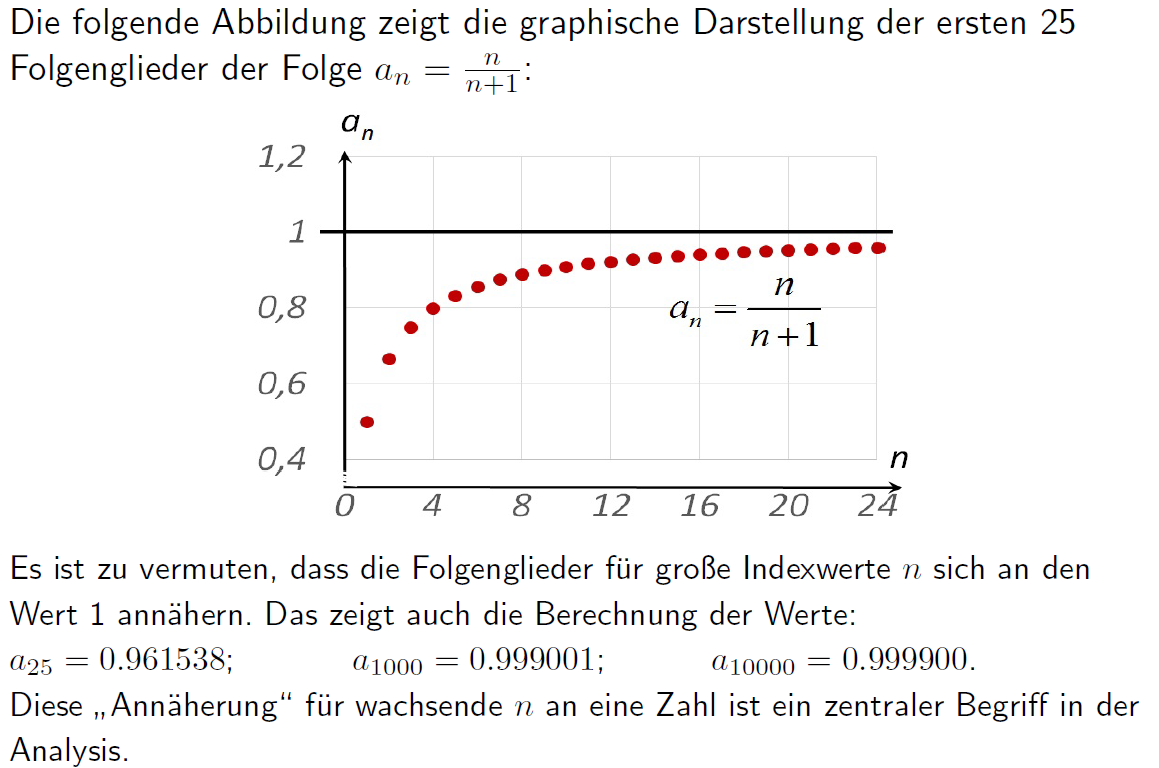
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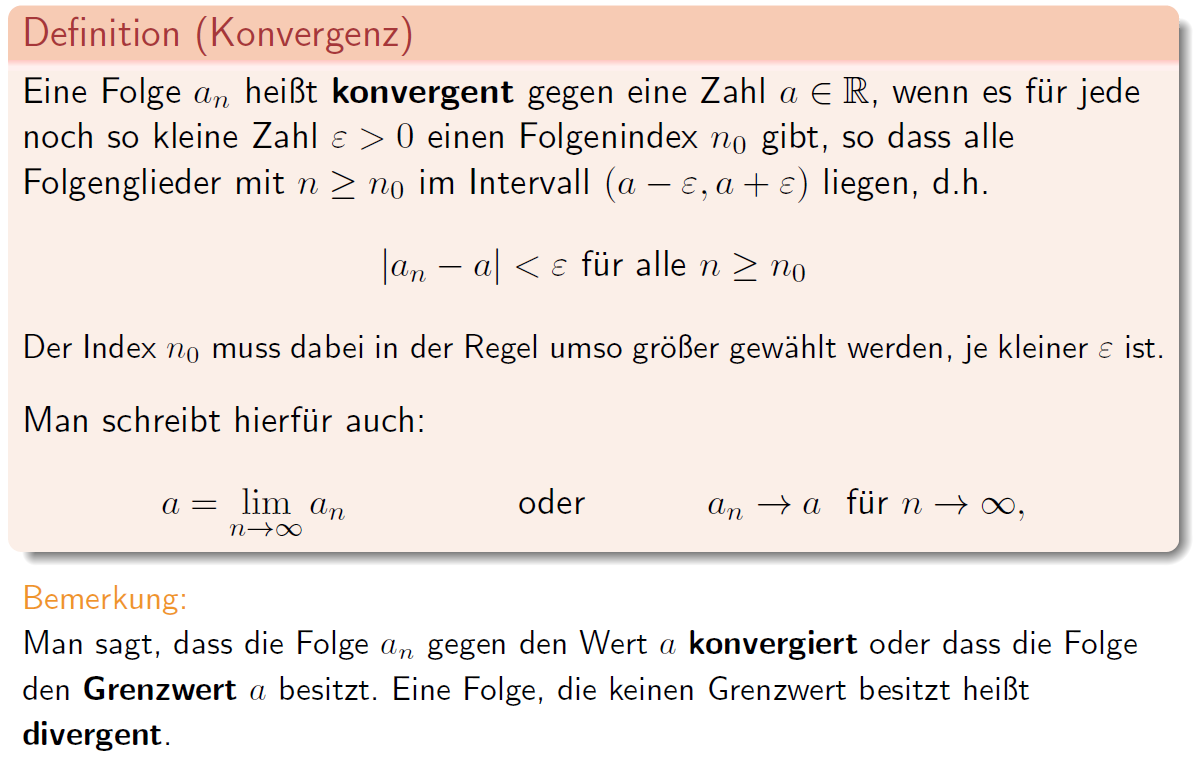


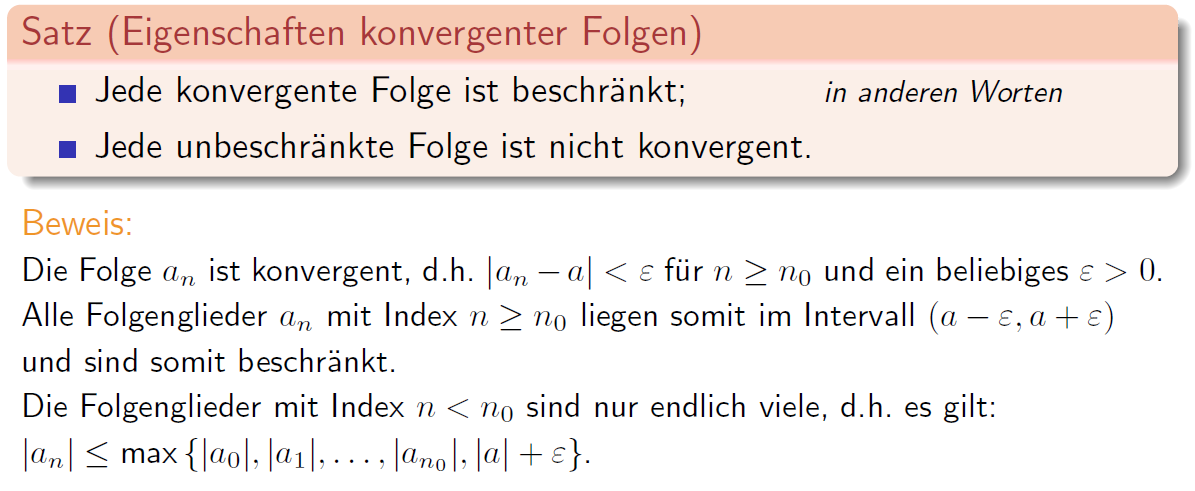




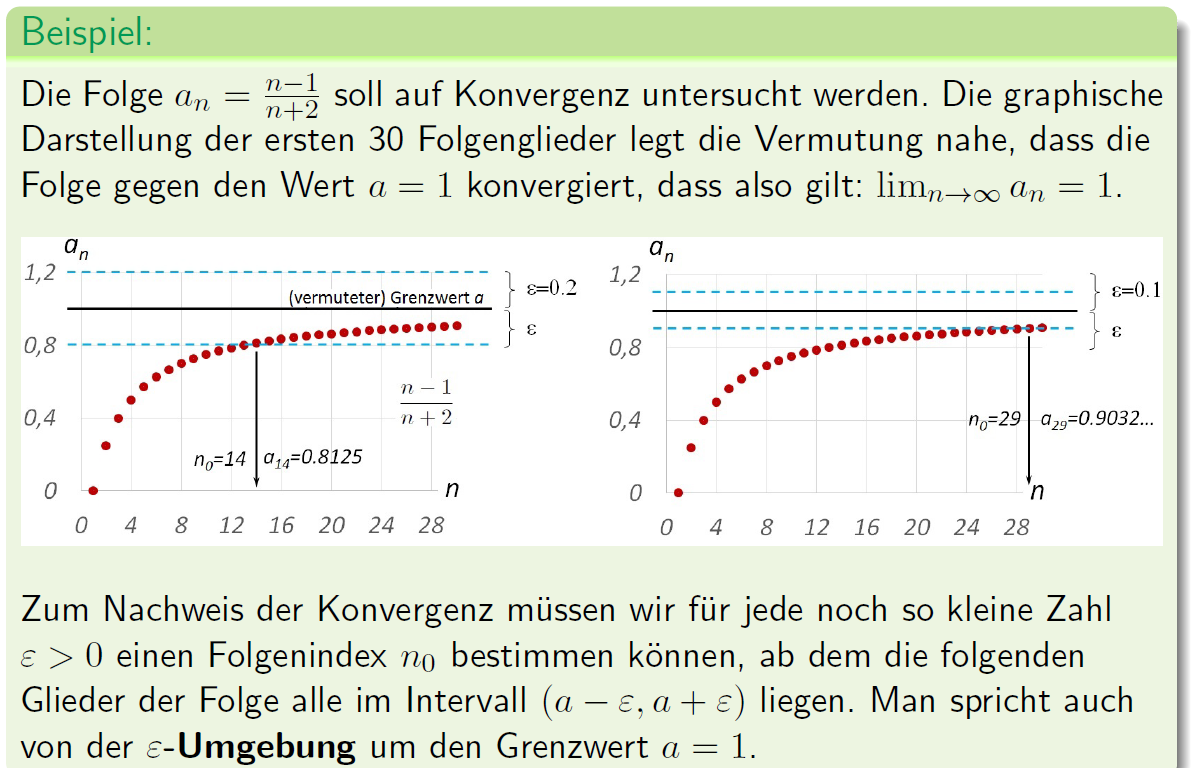
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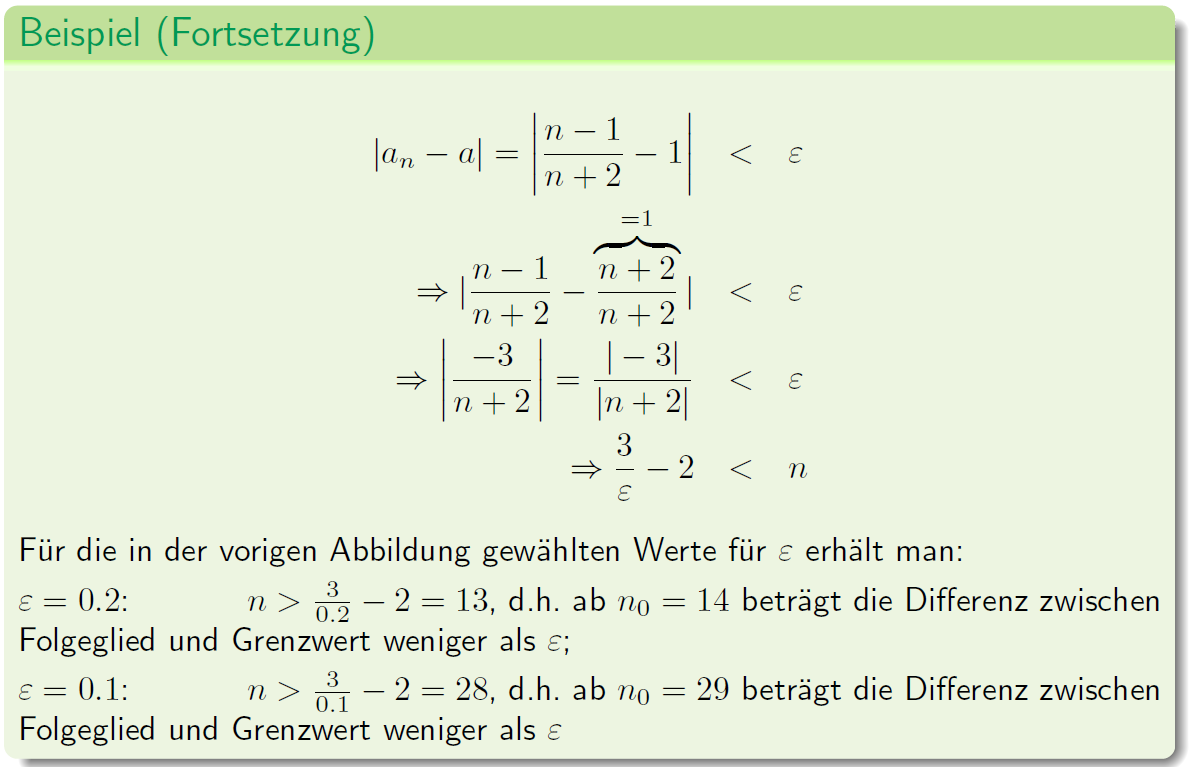


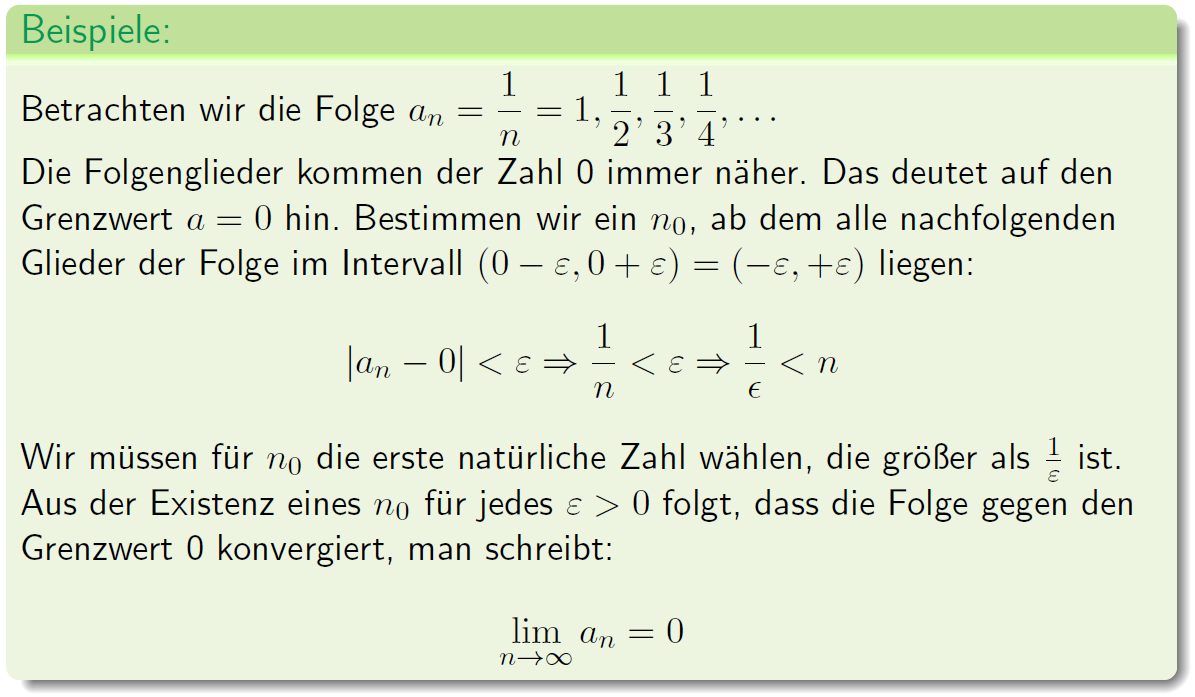


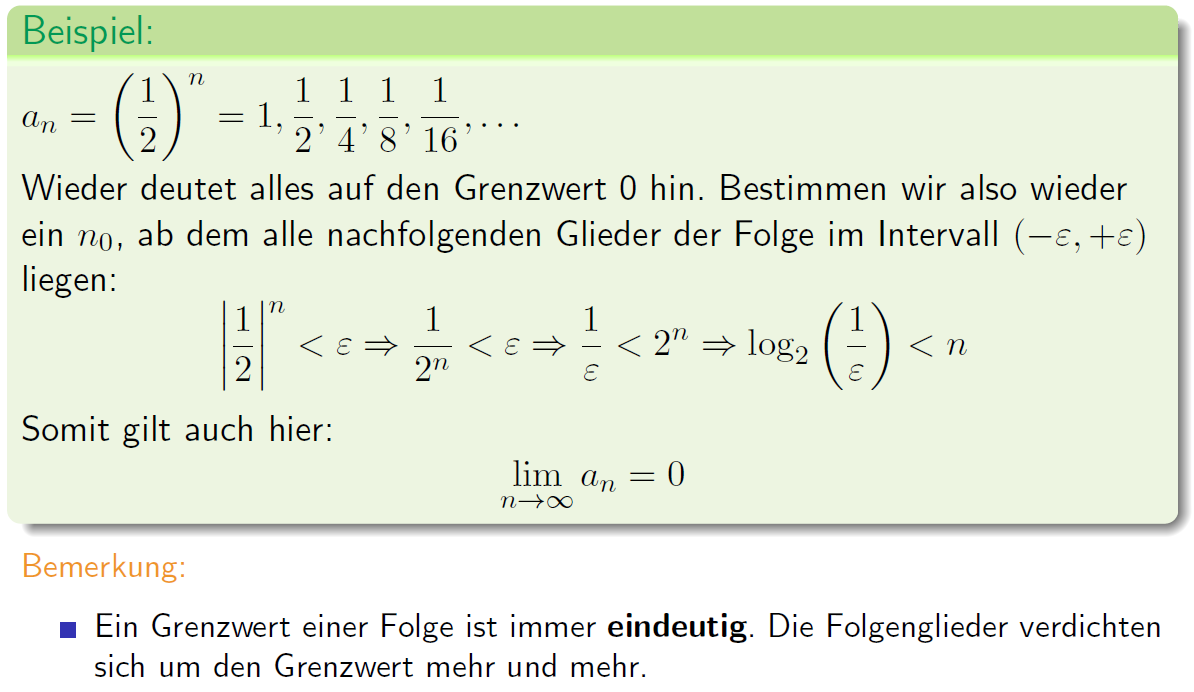


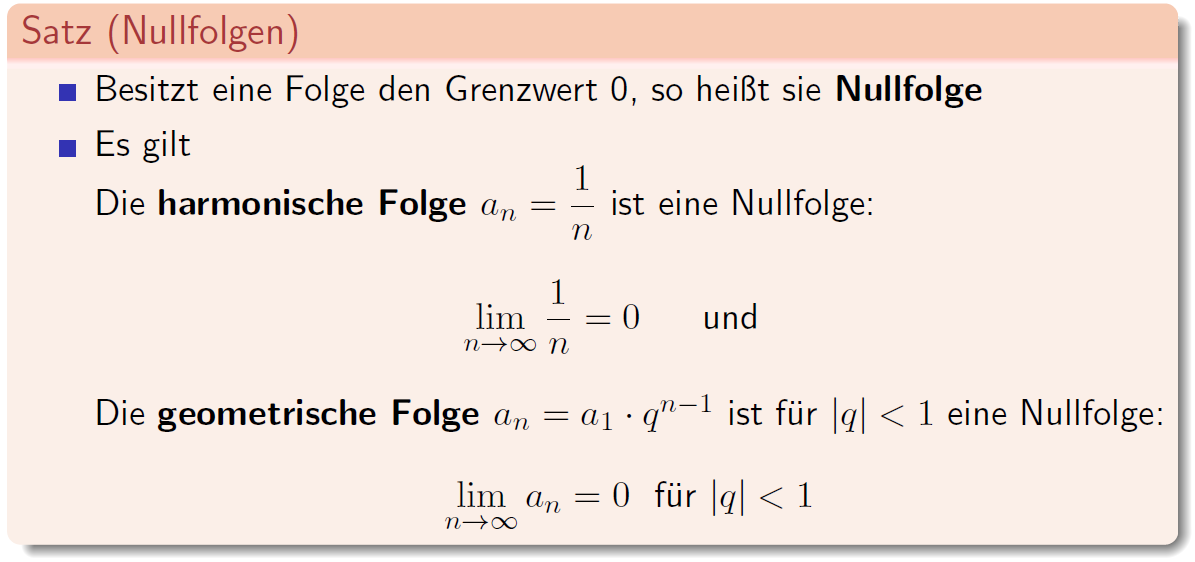
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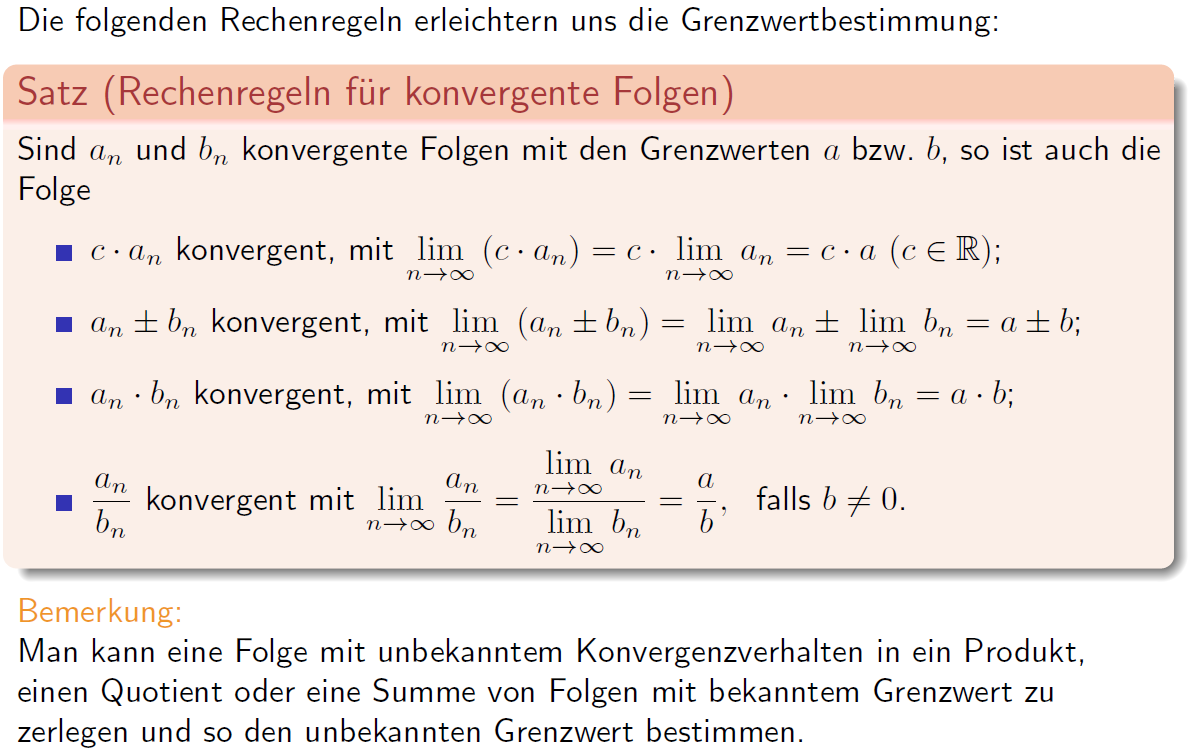


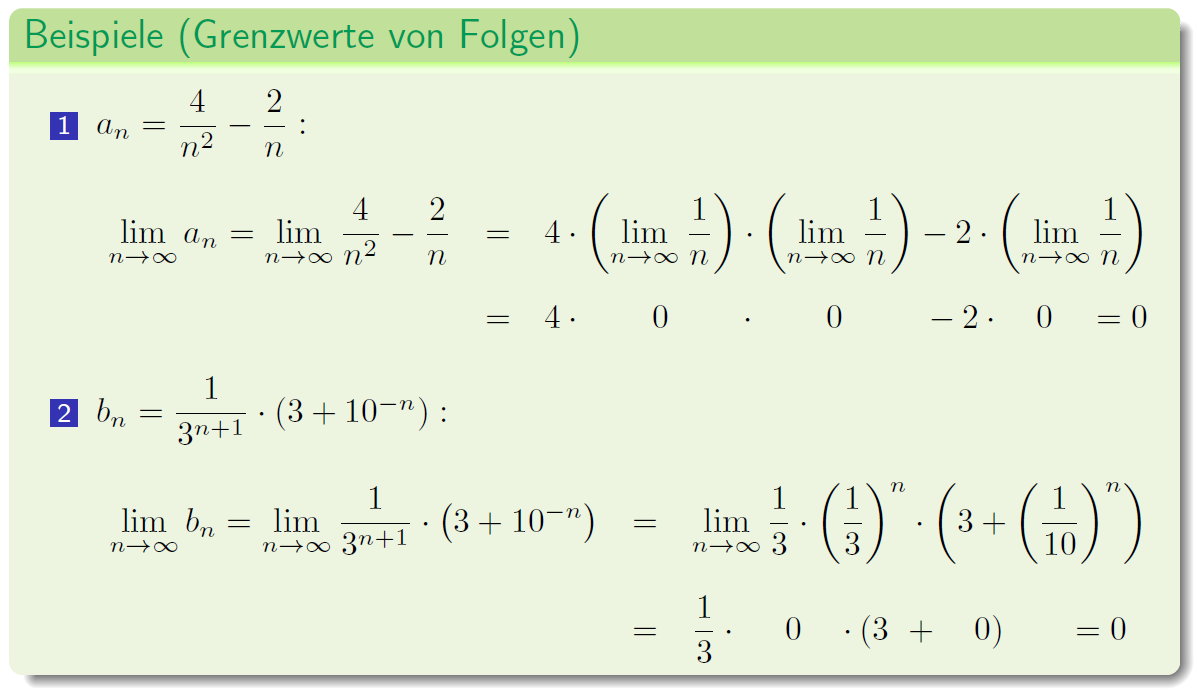


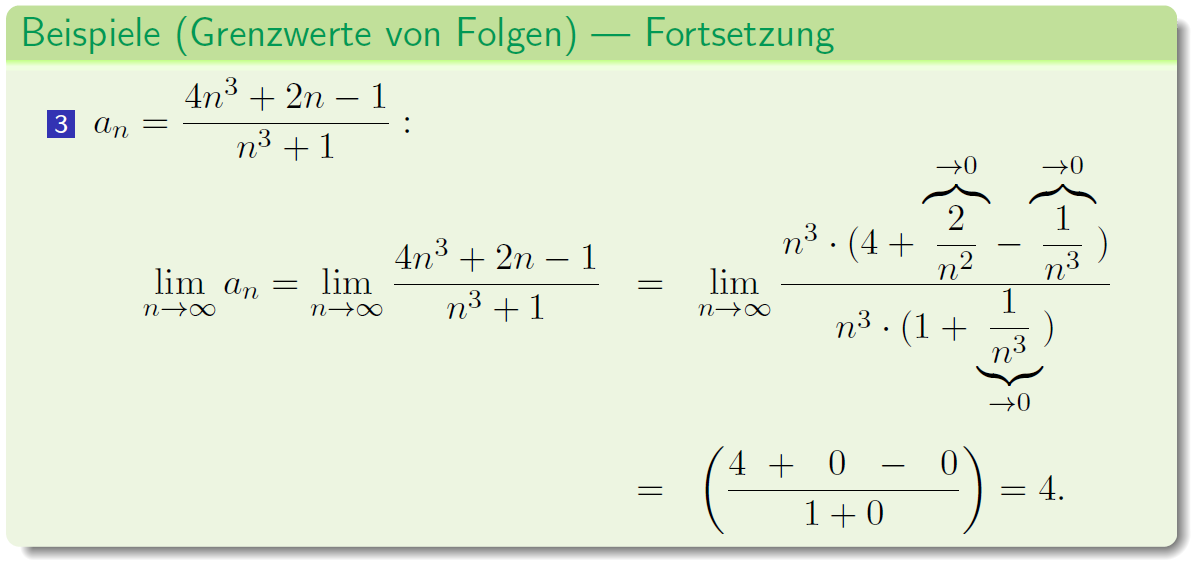


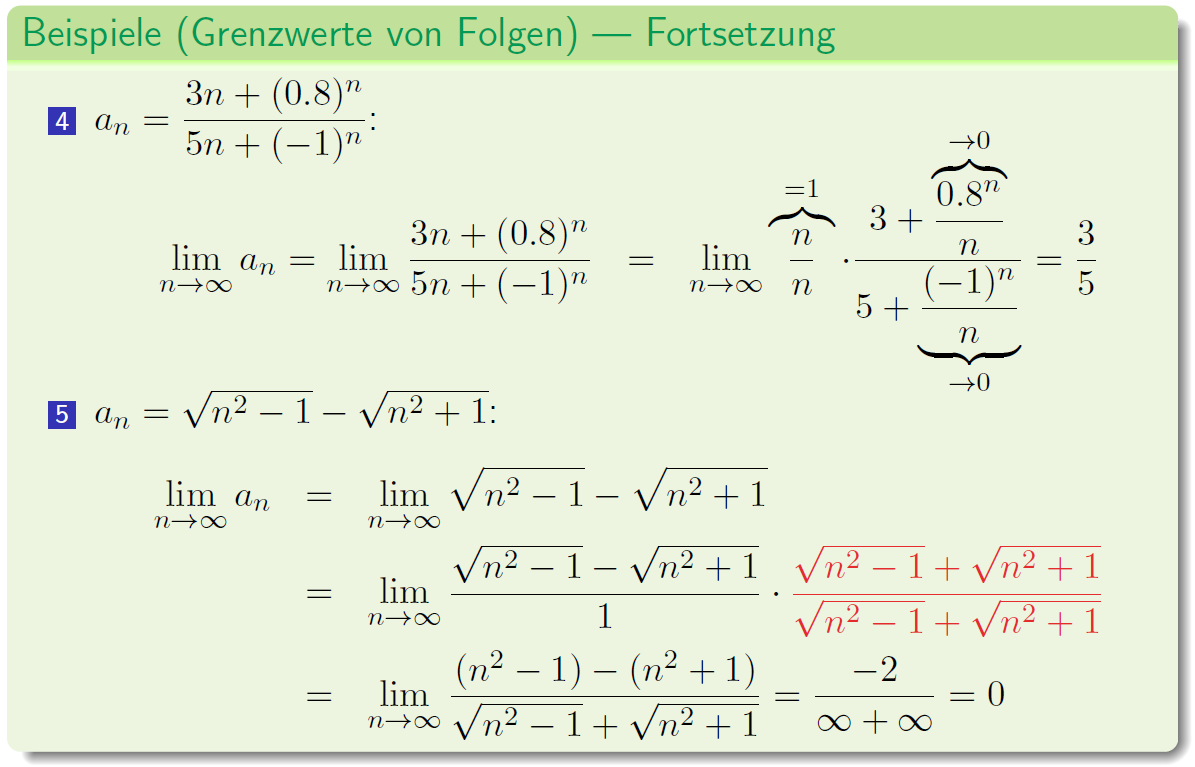




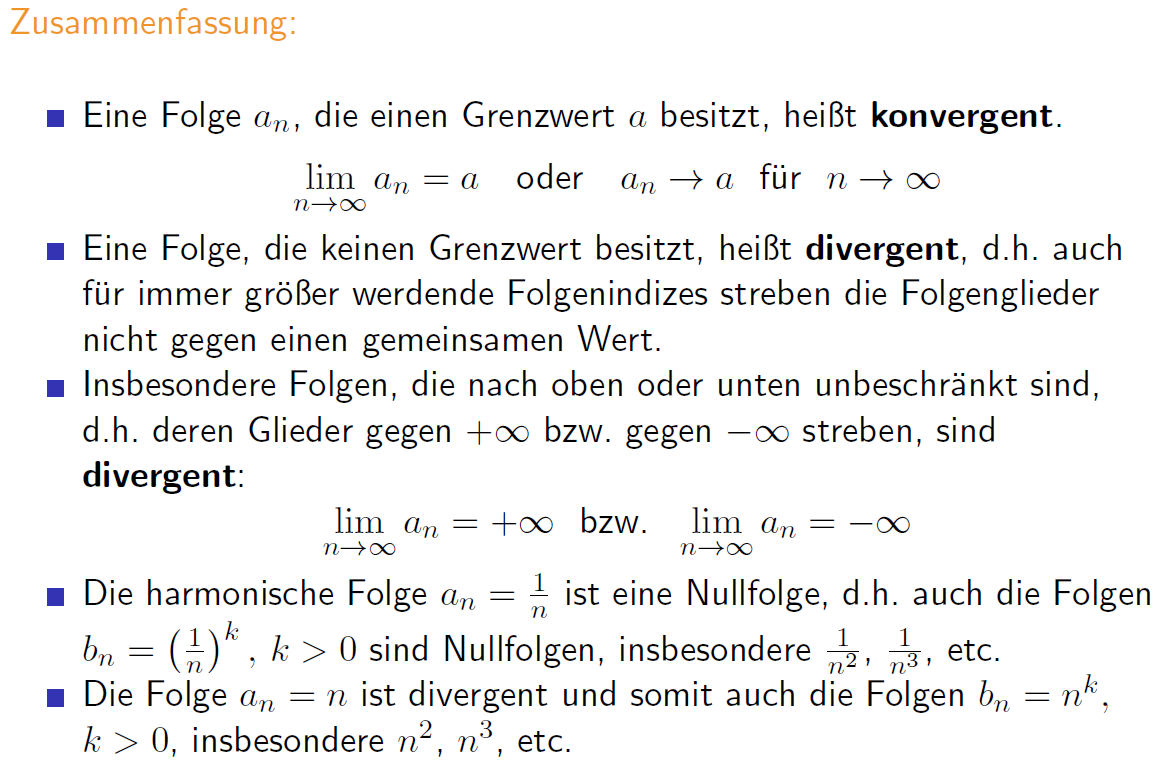


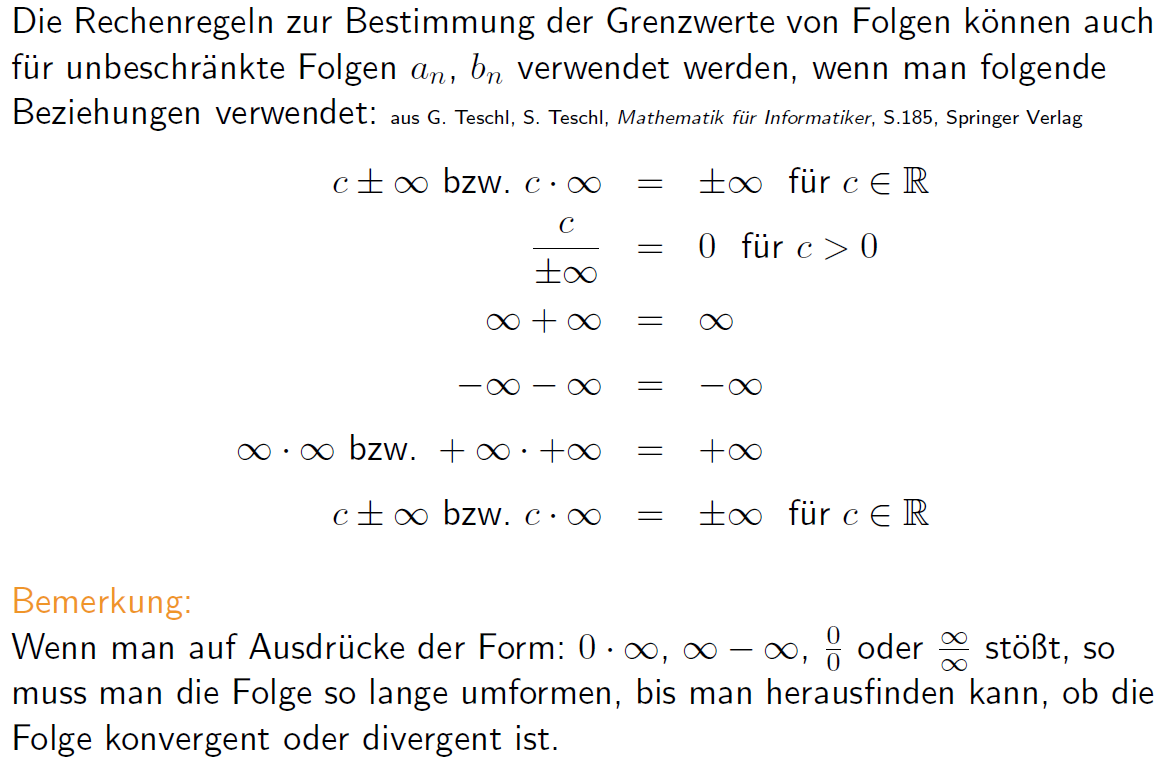




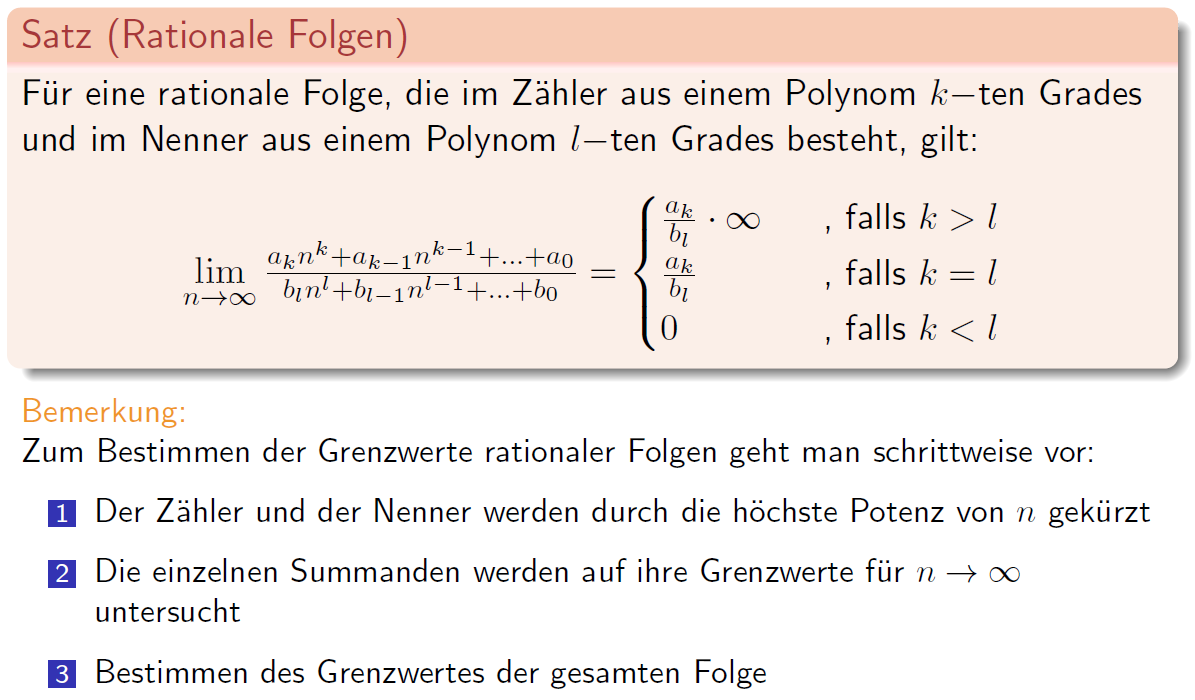


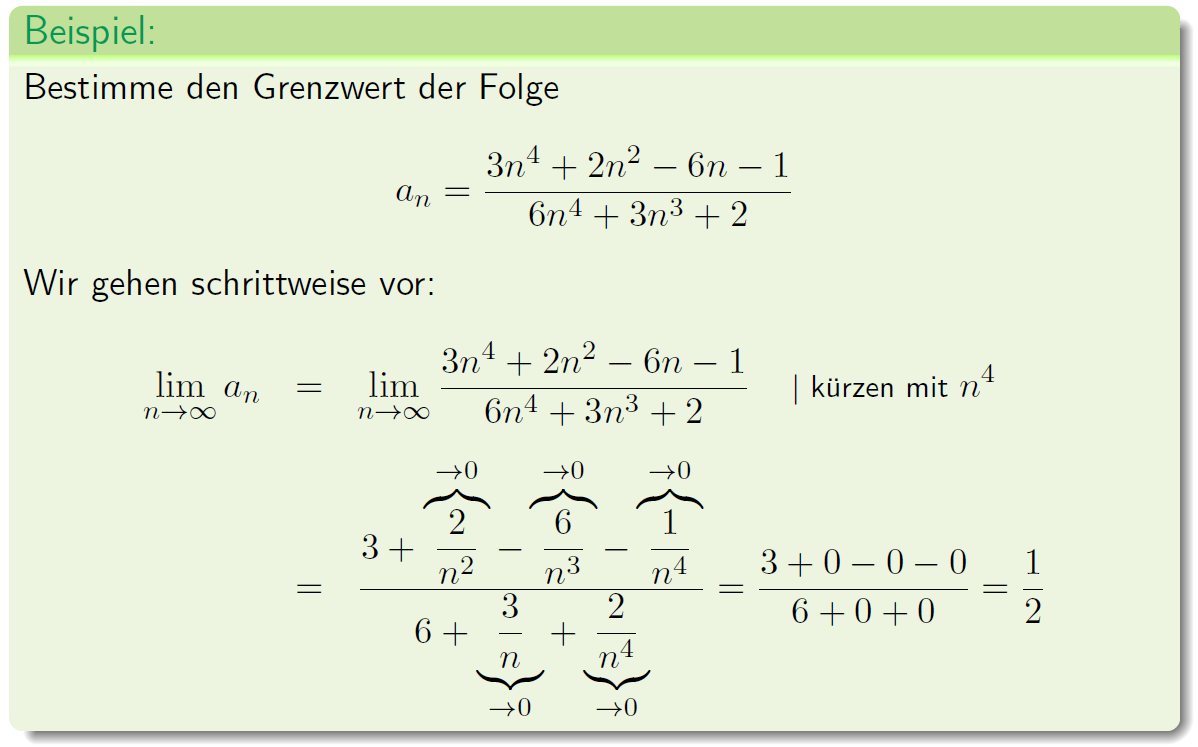
## Zusammenfassung

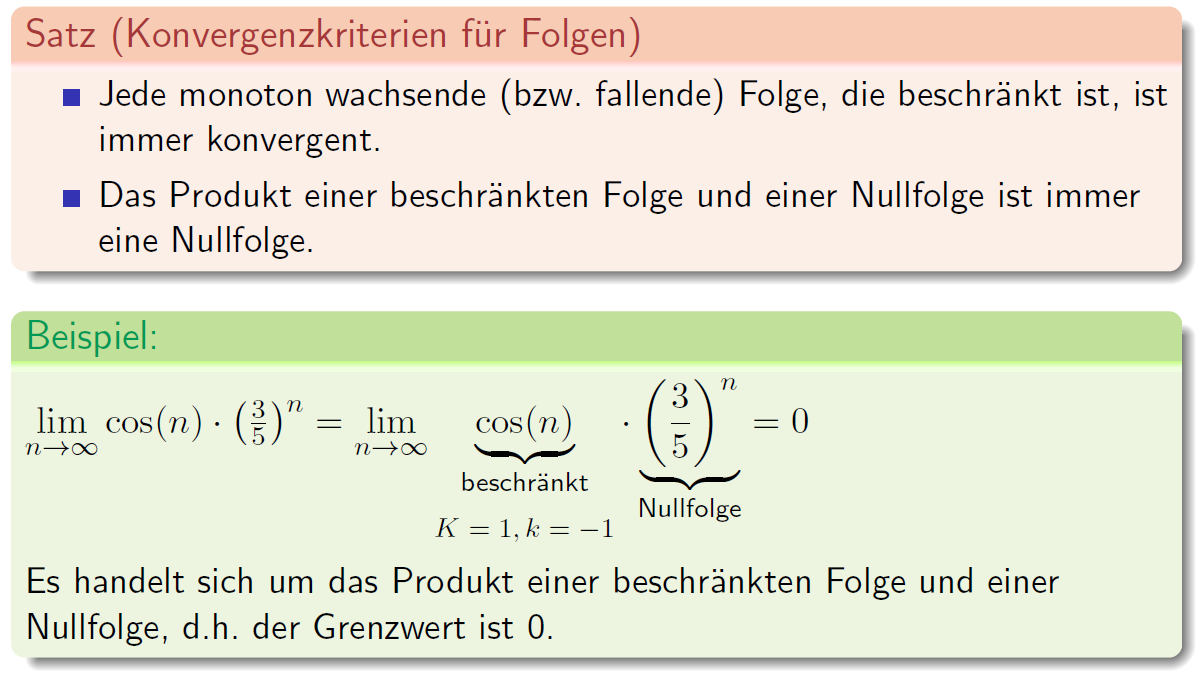


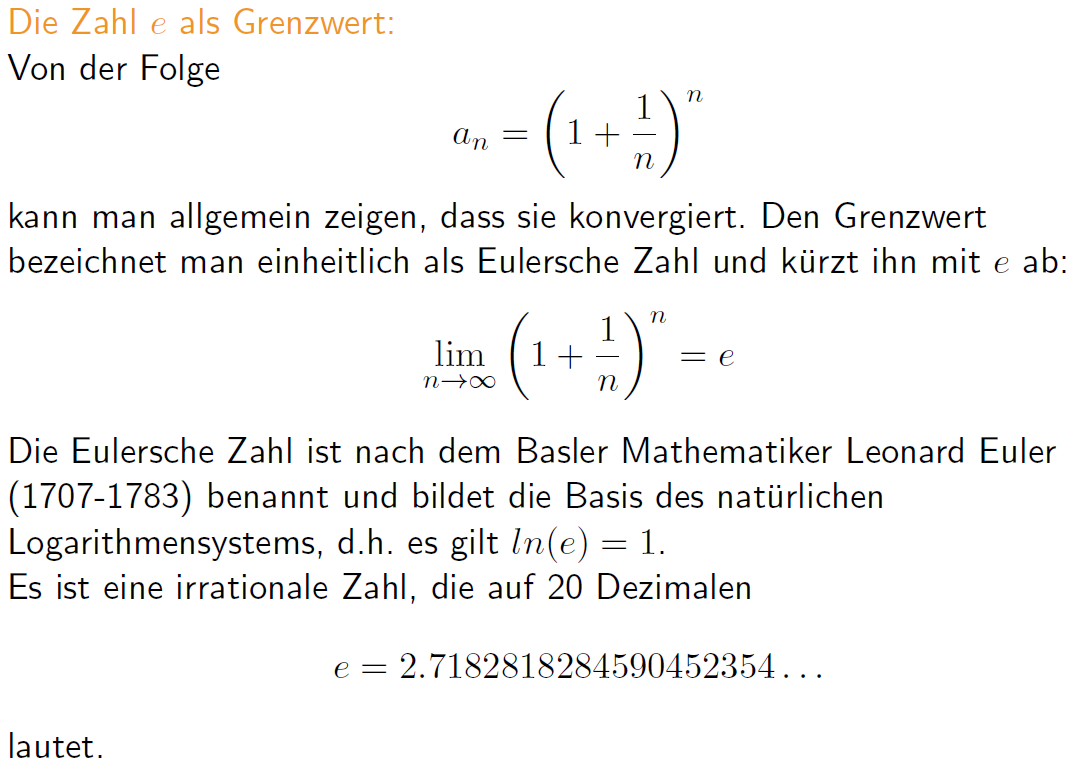












# Woche 3