# DIFFERENCES IN CELL DIVISION

<table>
<thead>
<tr>
<th>MITOSIS</th>
<th>MEIOSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>One division</td>
<td>Two divisions</td>
</tr>
<tr>
<td>No synapsis</td>
<td>Synapsis of homologous chromosomes</td>
</tr>
<tr>
<td>No crossing over</td>
<td>Crossing over</td>
</tr>
<tr>
<td>No independent assortment</td>
<td>Independent assortment</td>
</tr>
<tr>
<td>Occurs in all parts of body</td>
<td>Occurs ONLY in gonads</td>
</tr>
<tr>
<td>New cells IDENTICAL to parent cell (NO VARIATION)</td>
<td>New cells DIFFERENT from parent cell (VARIATION)</td>
</tr>
<tr>
<td>Two cells</td>
<td>Four cells</td>
</tr>
<tr>
<td>New cells: same number of chromosomes as parent cell (2n → 2n)</td>
<td>New cells: half the number of chromosomes as parent cell (2n → 1n)</td>
</tr>
<tr>
<td>Somatic cells</td>
<td>Sex cells</td>
</tr>
<tr>
<td>ASEXUAL</td>
<td>SEXUAL</td>
</tr>
</tbody>
</table>

## KEY WORDS

- binary fission
- chromatin
- chromosomes
- chromatid (sister)
- centromere
- kinetochores
- centrioles
- asters
- spindle fibers
- karyokinesis
- karyotype
- interphase (G₁,S,G₂)
- prophase
- metaphase
- anaphase
- telophase
- cytokinesis
- cleavage furrow
- cell plate
- growth factors
- density dependent inhibition
- restriction points

- Cell size
- Regulatory proteins
  - MPF
  - cyclin
  - CdK or cdc2
  - locus
  - homologous chromosomes
  - tetrad (or bivalent)
  - chiasmata (chiasma)
  - synopsis
  - crossing over
  - metaphase plate
  - independent assortment
  - variation
  - sex chromosomes
  - autosomes
  - polar bodies
  - gametes
  - haploid
  - diploid
  - syngamy
  - zygote