

| Function | Mitosis | Meiosis |
|--------------------------------------|--|---|
| • all DNA replication | Yes | Yes |
| • all nuclear division | Yes | Yes |
| • synthesis of histone proteins | Yes | Yes, during S-phase I, then again |
| • crossing-over occurs | No | Yes, while nuclei are present in Prophase I. This increases genetic variability |
| • all daughter cells | Yes | Yes |
| • chromosome count in parent cell | 2n (diploid) | 2n (diploid) |
| • chromosome count in daughter cells | 2n (diploid) | 2n (diploid) |
| • sex cells | • somatic, somatogonic, asexual reproduction | • produce haploid gametes for sexual reproduction; somatogonic chromosome number in each generation |