

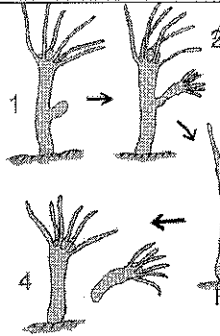
## Mitosis v Meiosis

P246; p271

### SUMMARY:

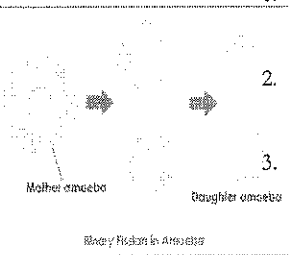
- Most cells in your body, replicate to make new cells via the process of MITOSIS
  - Mitosis occurs in your body cells (somatic)
  - The reason cells replicate is for: organism growth, organism repair, and some organisms replicate by mitosis (asexually)
- MEIOSIS only occurs in your gonads (testes or ovaries)
  - Meiosis produces gametes (sex cells)
  - In females the process yields an egg (haploid)
  - In males the process yields sperm (haploid)

# Asexual and Sexual Reproduction



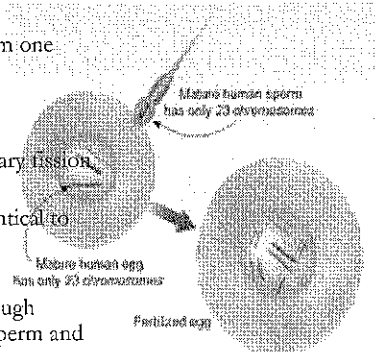
## A. Asexual reproduction

1. Production of offspring from one parent.
2. Does not involve meiosis or production of gametes.
  - a) Reproduction by binary fission or mitosis.
3. Offspring are genetically identical to parent



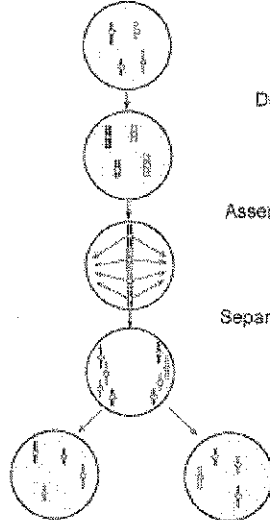
## B. Sexual reproduction

1. Production of offspring through meiosis and the union of a sperm and an egg
2. Offspring are genetically different from the parent because genes are combined in a new way in meiosis.
3. The evolutionary advantage of sexual reproduction is that it enables species to adapt rapidly to new conditions.



During fertilization the chromosomes from the sperm and egg unite to give the fertilized egg (also called a zygote) a total of 46 chromosomes.

## A. Mitosis



## B. Meiosis

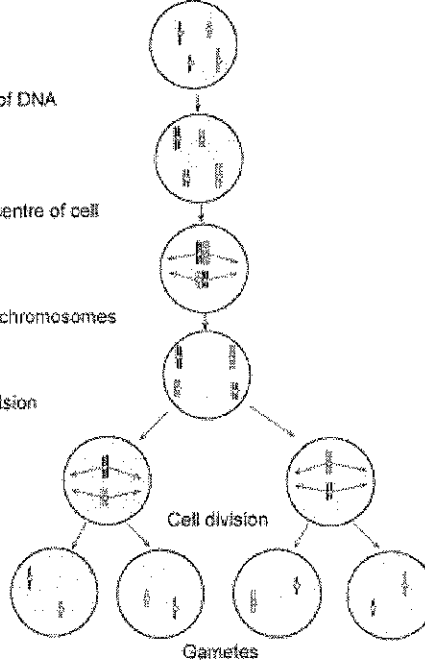


Figure 4. Outline of mitosis (A) and meiosis (B)

Maternal chromosomes are white and paternal chromosomes are black. Recombination between homologous chromosomes is not shown.