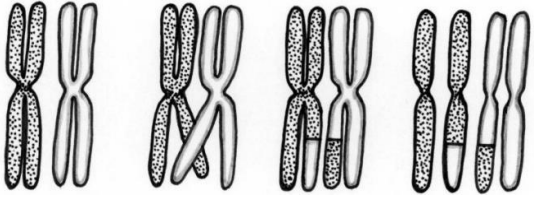


TOPIC 3. REPRODUCTION

25. Differences between mitosis and meiosis

$(2n \rightarrow 2n)$

$(2n \rightarrow n)$

Mitosis	Meiosis
Produces genetically identical cells.	Produces genetically different cells
Daughter cells contain the SAME number of chromosomes.	Cells contain HALF number of chromosomes.
	

CROSSING OVER

(Exchange of genetic material)

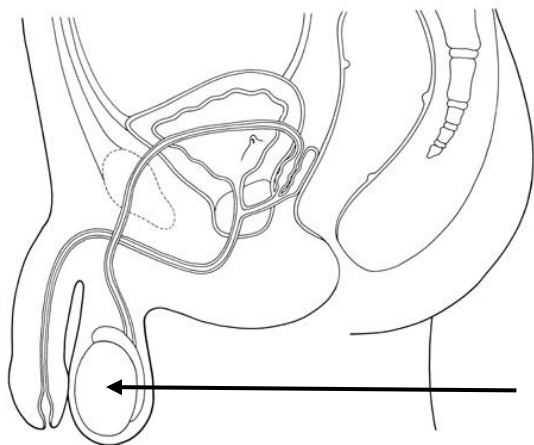
26. Sexual Reproduction = meiosis + fertilization.

27. Gametes unite to form a zygote.
(sperm + egg)

28. If the gametes each have 23 chromosomes, then what does their zygote have?

46

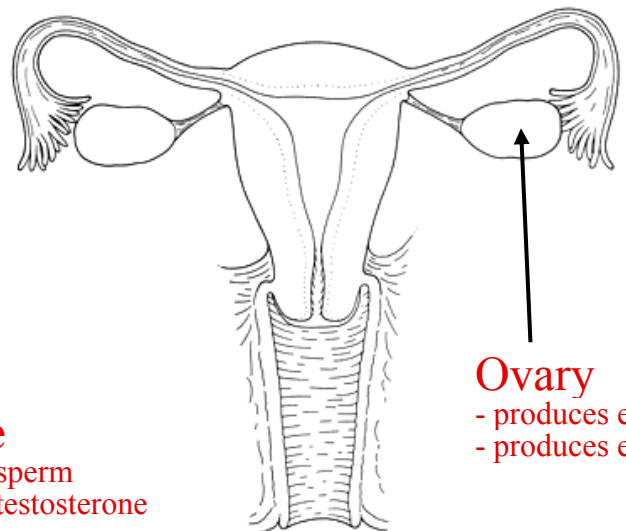
29. Male Reproductive System



Testicle

- produces sperm
- produces testosterone

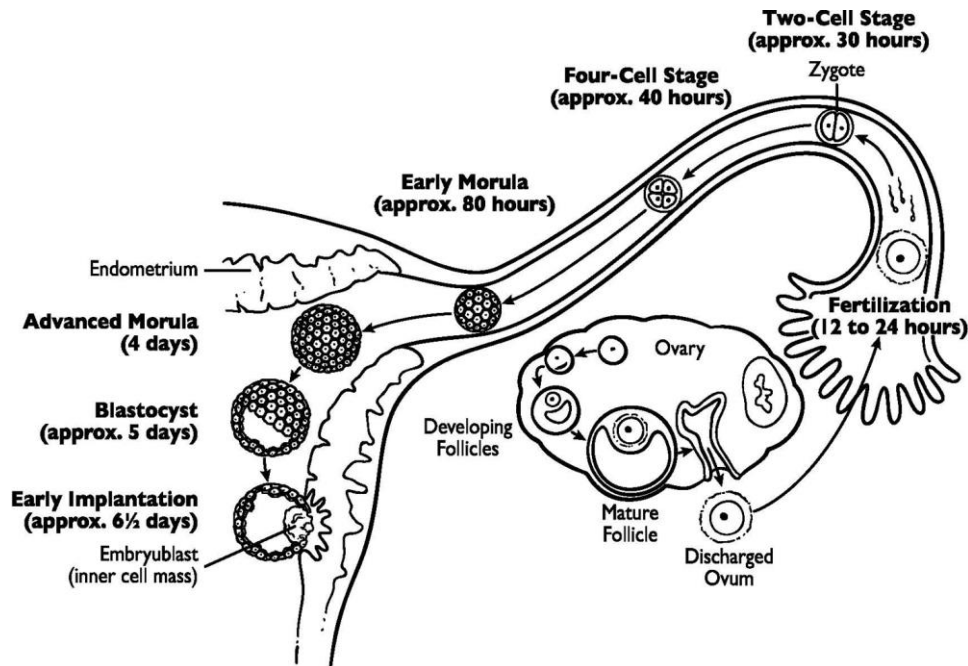
30. Female Reproductive System



Ovary

- produces eggs
- produces estrogen

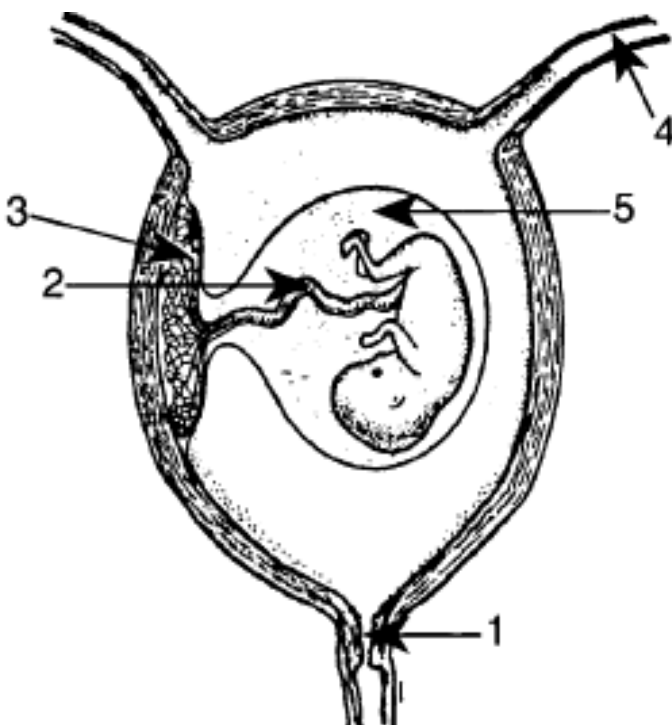
31. **Differentiation** - the process that transforms developing cells into specialized cells with different structures and functions.



Differentiation involves the turning **on** or turning **off** of genes.

Genes are EXPRESSED when they are turned on and making proteins!

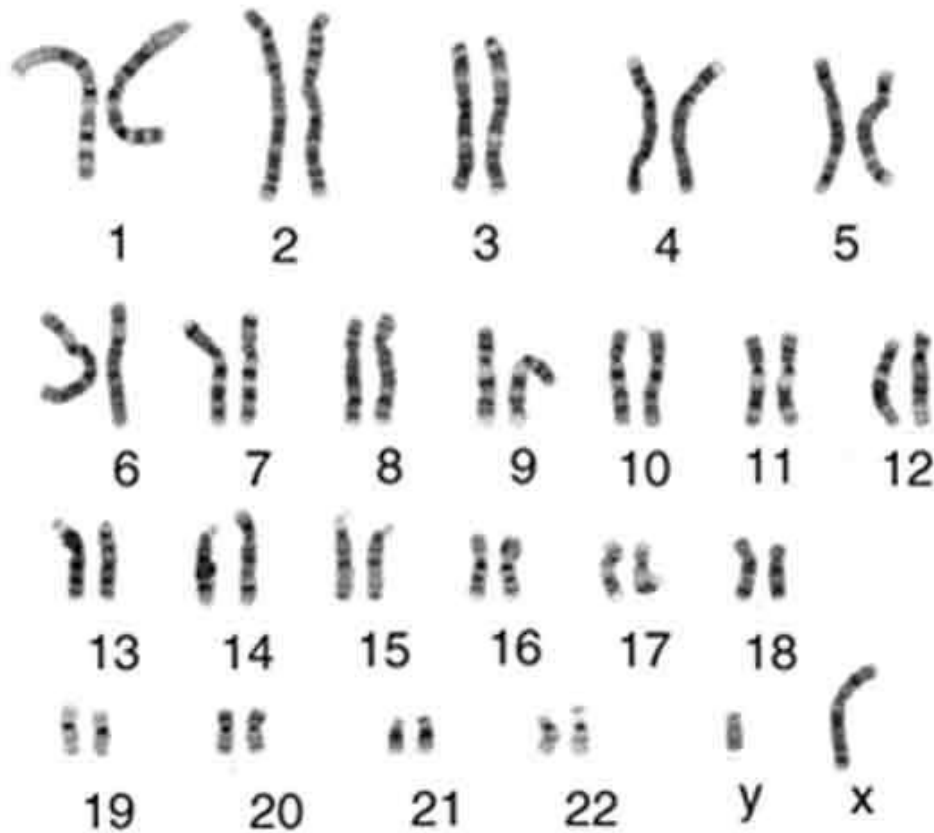
32. Pregnant Female Reproductive Tract



1. **Cervix** _____
2. **Umbilical Cord** _____
3. **Placenta** _____
4. **Fallopian Tube / Oviduct** _____
5. **Amniotic Fluid** _____

33. Reproductive Technology

- (a) **In Vitro Fertilization**: involves removing eggs from the female and sperm from the male, fertilizing them in a Petri dish and then implanting the fertilized egg cell (*zygote*) back into the female (*uterus*).
- (b) **Amniocentesis**: involves removing some of the cells from the amniotic fluid surrounding the fetus and analyzing them.
- (c) **Karyotype**: involves arranging chromosomes in homologous (similar) pairs by size and shape to see if the fetus has any chromosomal disorders like Down Syndrome (*Trisomy 21*)



Is this a Karyotype of a Male or Female? _____

How do you know? _____