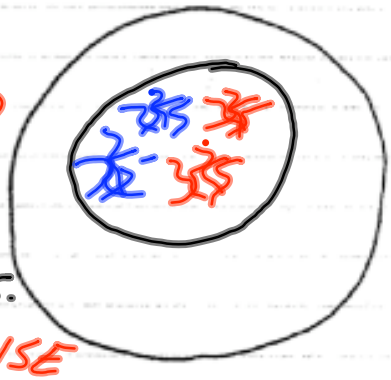
February 04, 2010

DNA IS IN A THIN TANGLED MASS CALLED CHROMATIN.

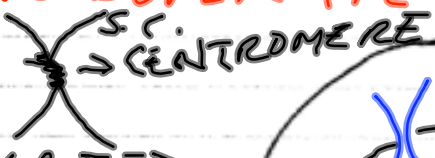
INTERPHASE



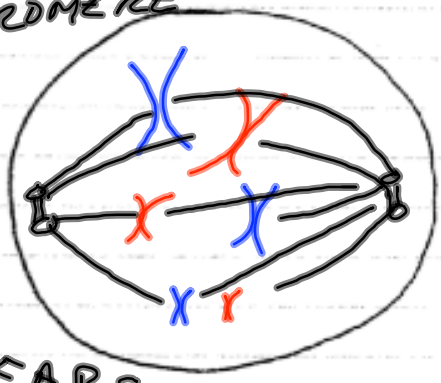
S PHASE DNA REP. OCCURS.

G_2 DNA COIL, CONDENSE JOIN TO ITS DUPLICATE.

PROPHASE I



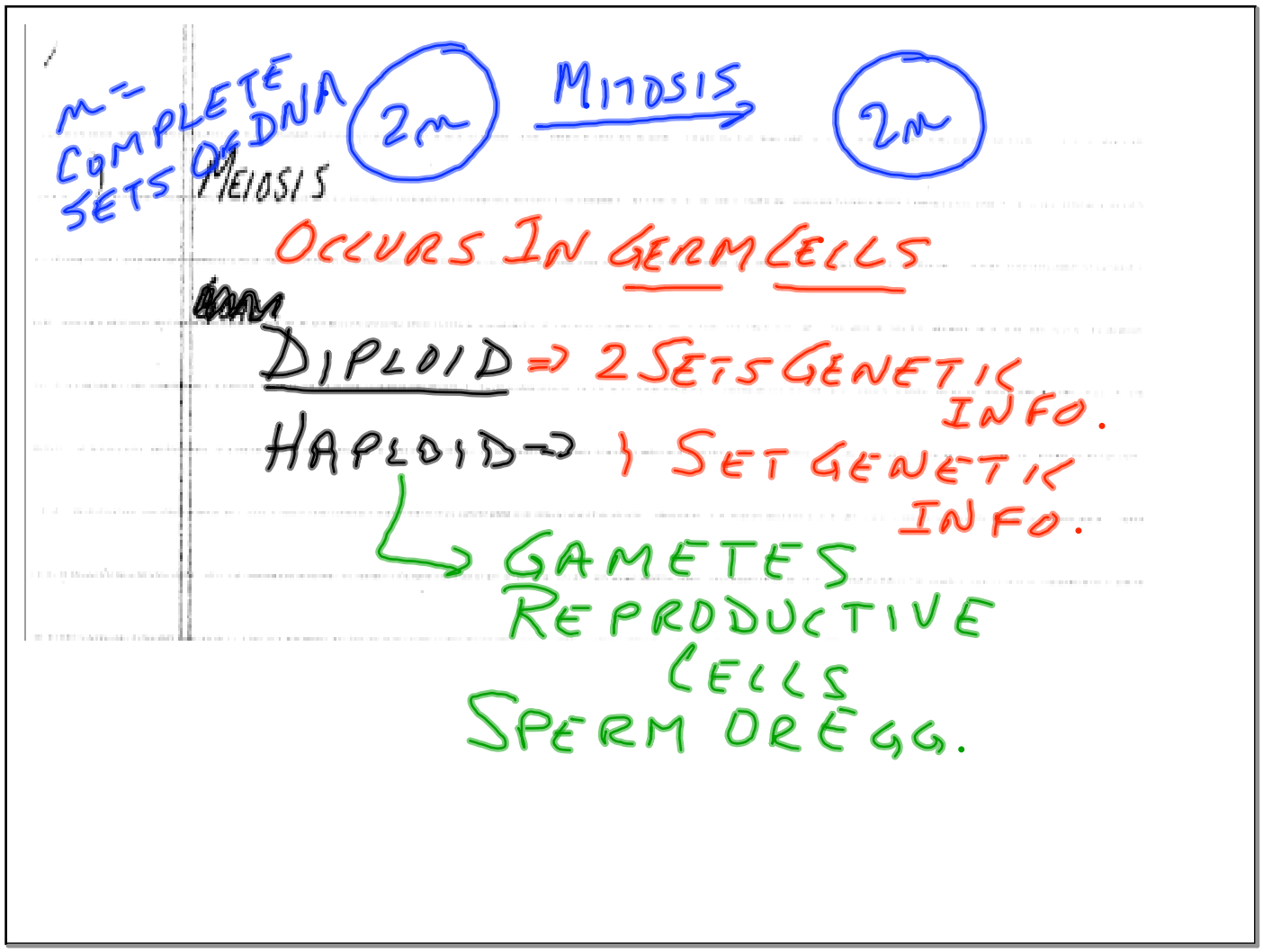
DUPLICATED CHROMOSOMES.



1.) NUCLEUS BREAKS DOWN

2.) SPINDLE APPEARS.

3.) SPINDLE FIBERS ATTACH TO DUPLICATED CHROMOSOMES.


n= COMPLETE SETS OF DNA
2n
MITOSIS
2n
MEIOSIS
OCCURS IN GERM CELLS
DIPLOID => 2 SETS GENETIC INFO.
HAPLOID => 1 SET GENETIC INFO.
GAMETES
REPRODUCTIVE CELLS
SPERM OR EGG.

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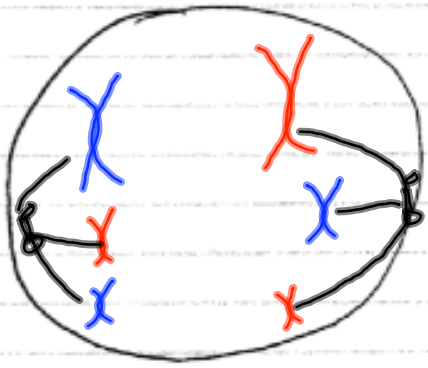
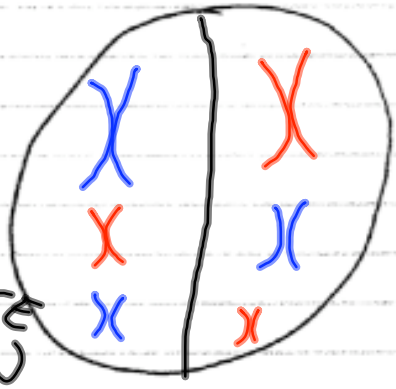
ANAPHASE I

→ HOMOLOGOUS PAIRS (TETRADS) WILL BE PULLED TO OPPOSITE POLES.



TELOPHASE I

DUPLICATED CHROMOSOMES REACHED OPPOSITE POLES & CELL NOW SPLIT



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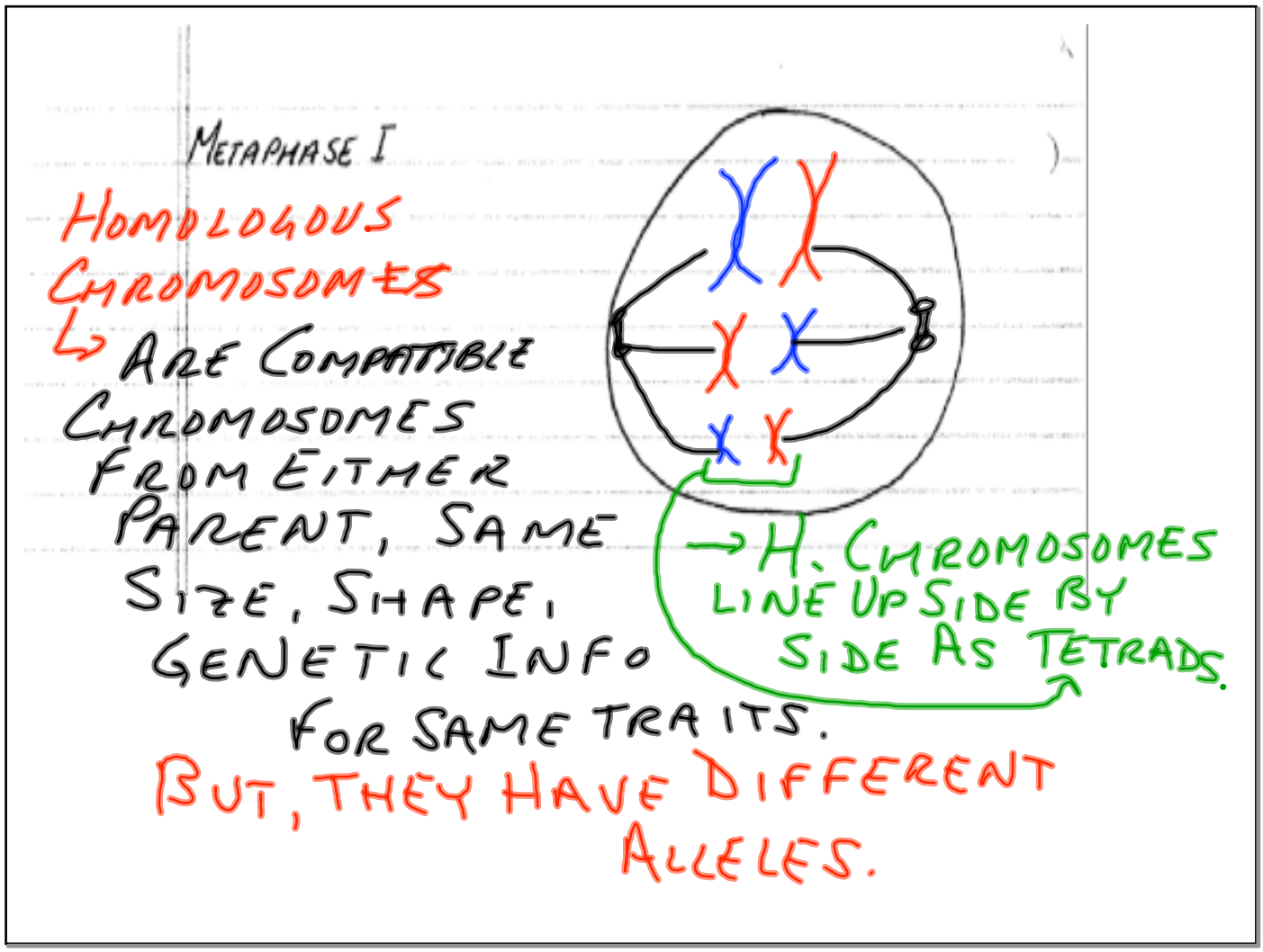
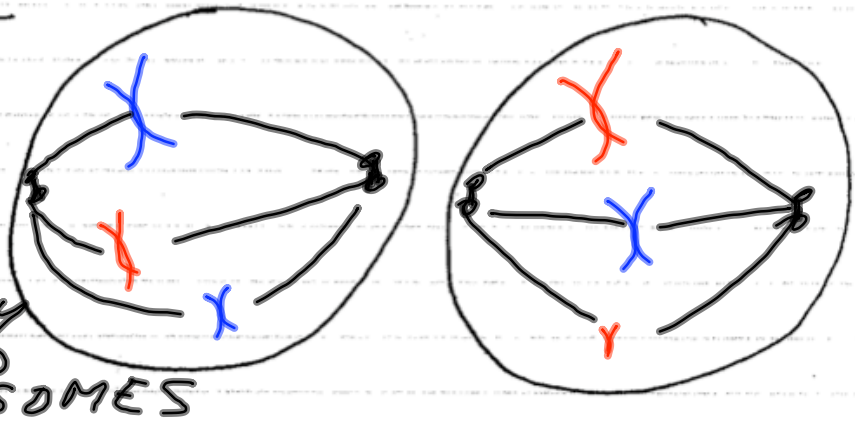


PROPHASE II

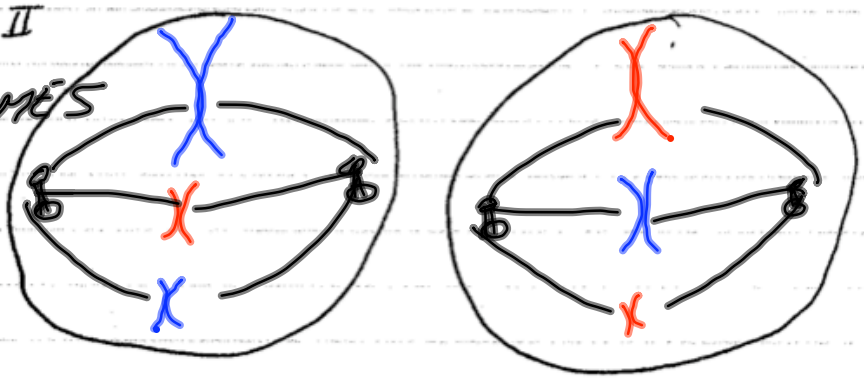
SPINDLE RE-FORM.

SPINDLE FIBERS ATTACH TO DUPLICATED CHROMOSOMES



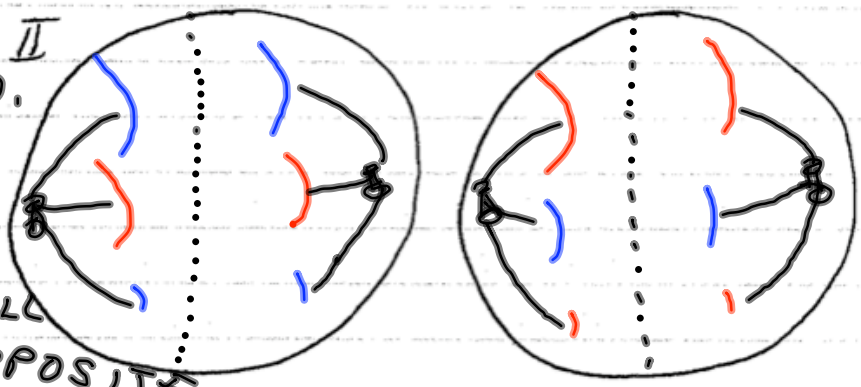
METAPHASE II

DUP. CHROMOSOMES WILL LINE UP HEAD TO TOE @ EQUATOR.

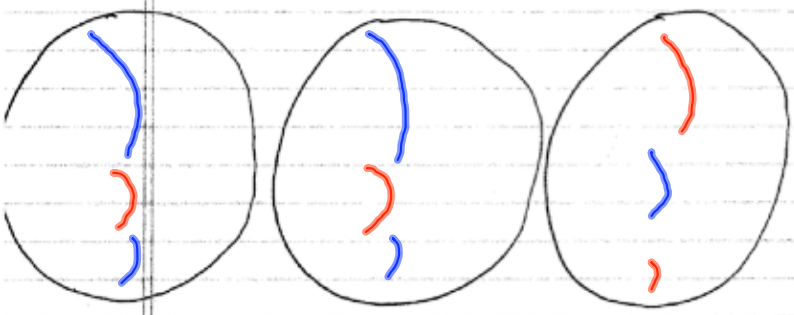


ANAPHASE II

DUP. CHROMO. WILL SEPARATE, UNDUP. CHROMO. WILL MOVE TO OPPOSITE POLES



TELOPHASE II



THE CELL'S DIVIDE PRODUCING 4 CELLS, EACH WITH ONE COMPLETE SET UNDUP. CHROMOSOMES.

AT WHAT PHASE IS THE COMBINATION OF CHROMOSOMES THAT WILL END UP IN GAMETES ESTABLISHED?

SOURCES OF GENETIC VARIABILITY.

(1) RANDOM ALIGNMENT OF HOMOLOGOUS CHROMOSOMES IN METAPHASE I.

$2^3 = 8$ $2^{23} > 8$ MILLION

(2) CROSSING OVER

↳ IN PROPHASE I, EQUAL AMOUNTS OF GENETIC MATERIAL ARE EXCHANGED BETWEEN HOMOLOGOUS CHROMOSOMES.