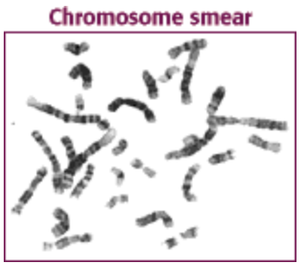
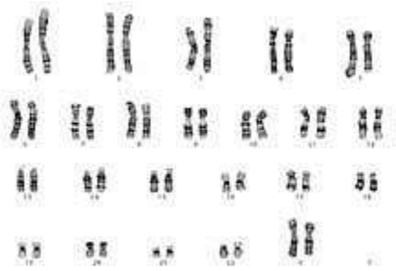
Karyotype Lab

Starting with a **… we cut and paste the photo to get this**





Actually a technician uses scissors to cut and paste the chromosomes on a sheet of paper.

Now go to the following site and answer the following questions:
http://www.biology.arizona.edu/human_bio/activities/karyotyping/karyotyping.html

A 1. What notation would you use to characterize Patient A's karyotype?

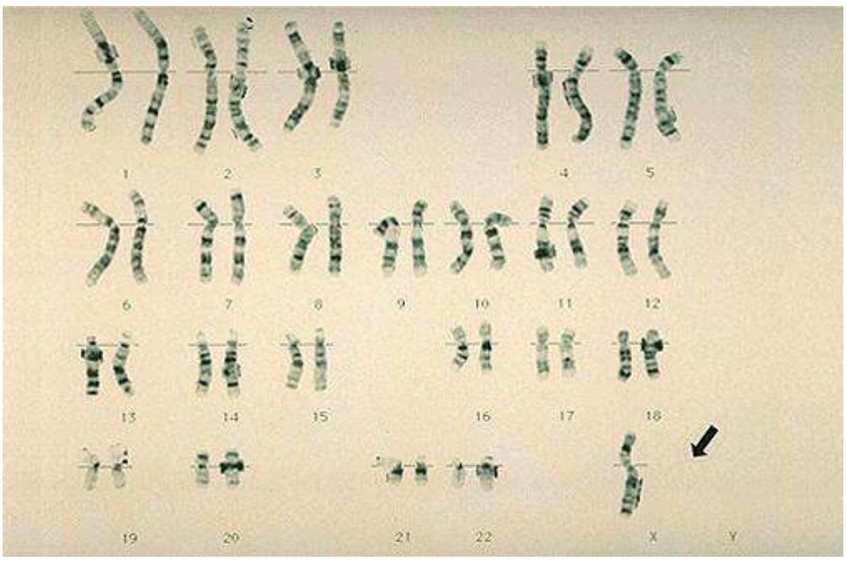
A 2. What diagnosis would you give patient A?

B 1. What notation would you use to characterize Patient B's karyotype?

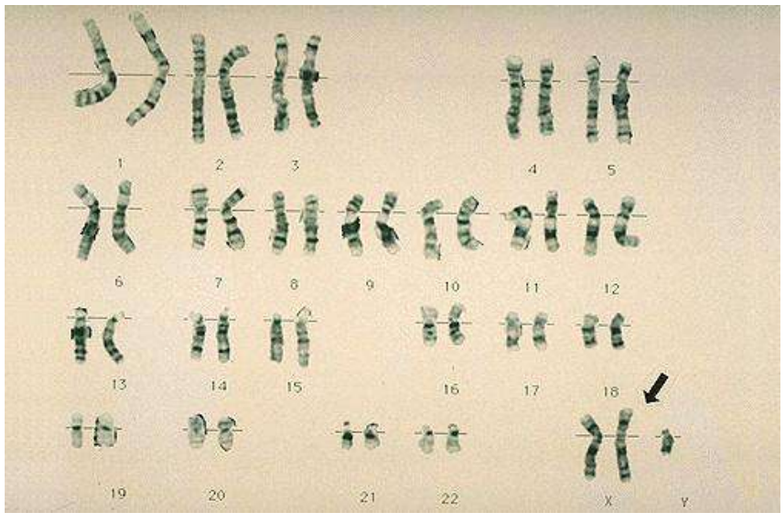
B 2. What diagnosis would you give patient B?

C 1. What notation would you use to characterize Patient C's karyotype?

C 2. What diagnosis would you give patient C?

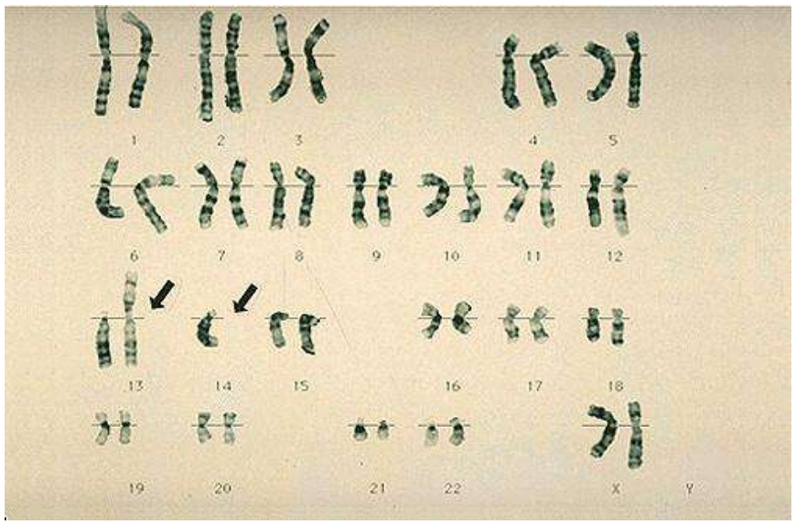


Referring to your notes - identify the karyotype above:

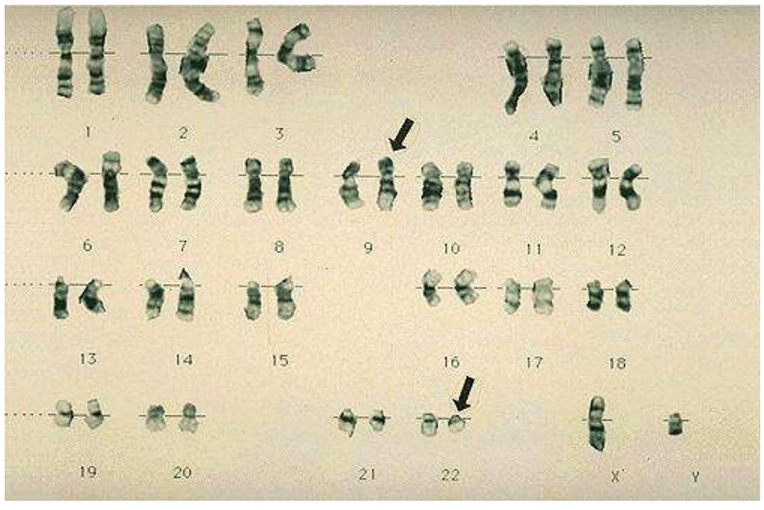


Referring to your notes - identify the karyotype above:

The patient's problems are due to something other than an abnormal number of chromosomes:



Examine the karyotpe above – it is called a A Robertsonian translocation of chromosomes 13 and 14, an end to end fusion of the two chromosomes, is seen here in a balanced rearrangement. There is no net gain or loss of genetic material in this person so they could have a normal phenotype. Their risk, however, for an abnormal child or spontaneous pregnancy loss is increased.



Karyotypic abnormalities are characteristic of many cancers. Here is the so-called "Philadelphia chromosome" of chronic myelogenous leukemia, which is really a 9:22 translocation. A section of the 22 chromosome has been translocated to 9.

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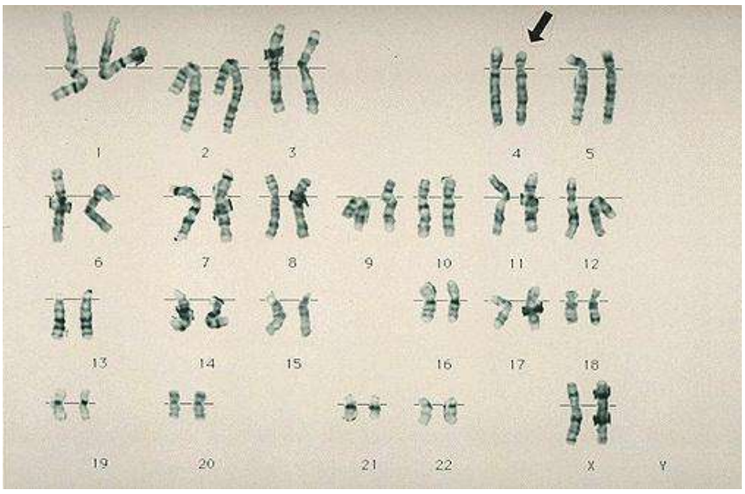
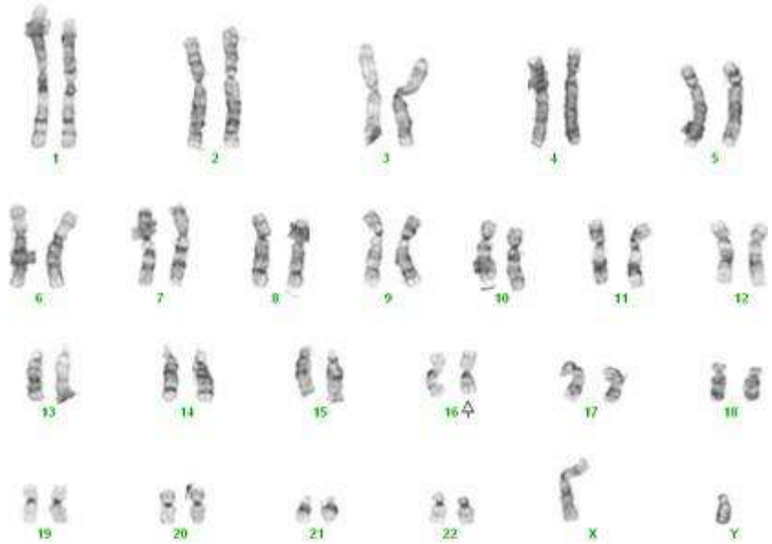


There is a band missing here – this type of mutation is called a _____



This image shows an inversion of chromosome 16. By looking carefully at the pair of 16, you will see that the chromosome on the right looks different from the one on the left. The left one is normal and the right one is inverted near the centromere. Inversions, by definition, do not involve loss or gain of chromosomal material. If the breakpoints of the inversion do not disrupt genes they may not have an associated phenotype.

http://home.earthlink.net/~heinabilene/karyotypes/karyoty.htm#deletions

List all the mutations that can be detected by karyotype:

_____

_____

Time permitting – play around with these links:

http://www.biology.arizona.edu/human_bio/problem_sets/human_genetics/human_genetics.html

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