

Chromosome Analysis

Part A:

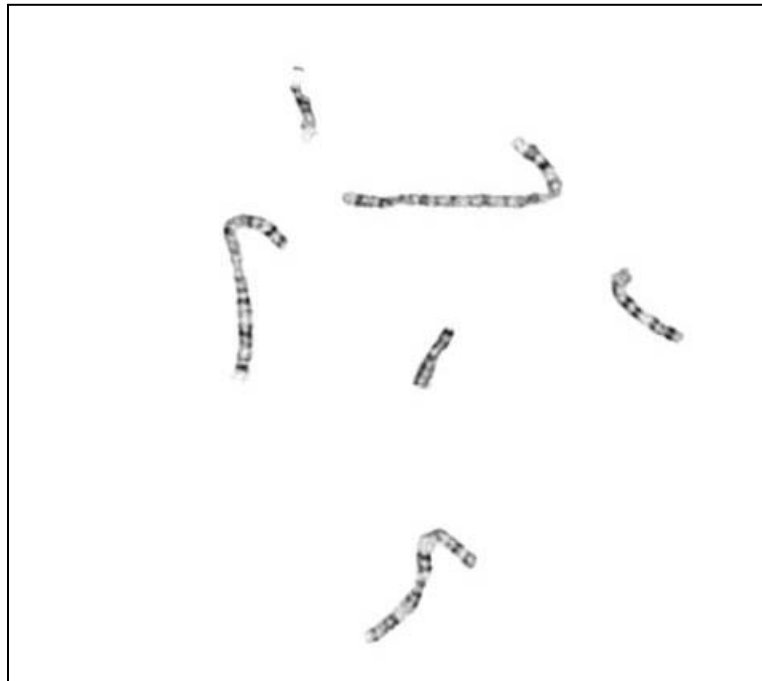
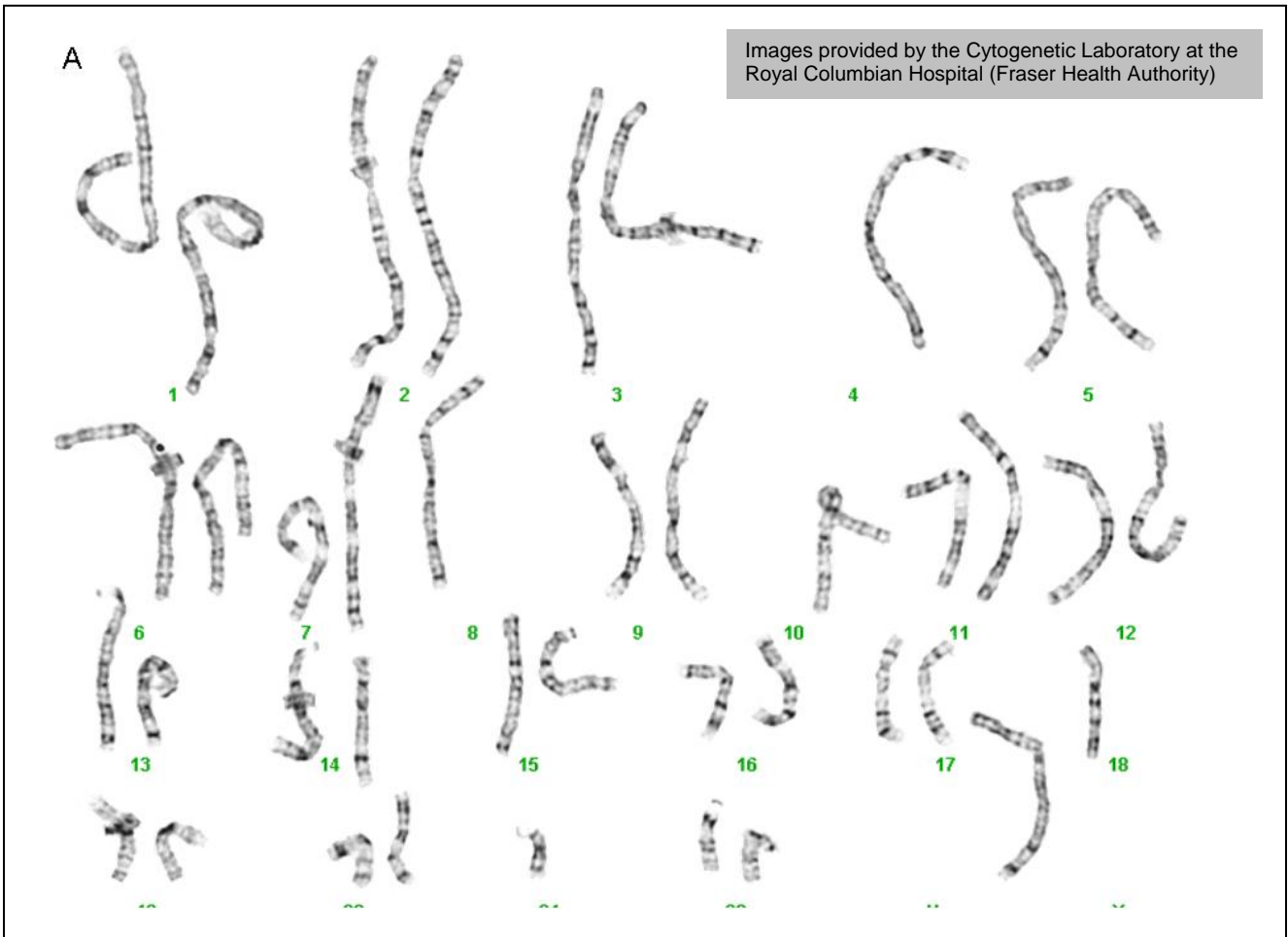
You got a summer job working with a cytotechnologist at your local hospital. Your boss is late for work, and a doctor is waiting for a chromosome report on a patient. You are given a sheet that has an incomplete karyotype, with the missing chromosomes at the bottom. Your task is to complete the karyotype and determine what, if any, the abnormality is. You need to check with the cytogeneticist (your teacher), and she will give you an official report to give to the doctor.

Note:

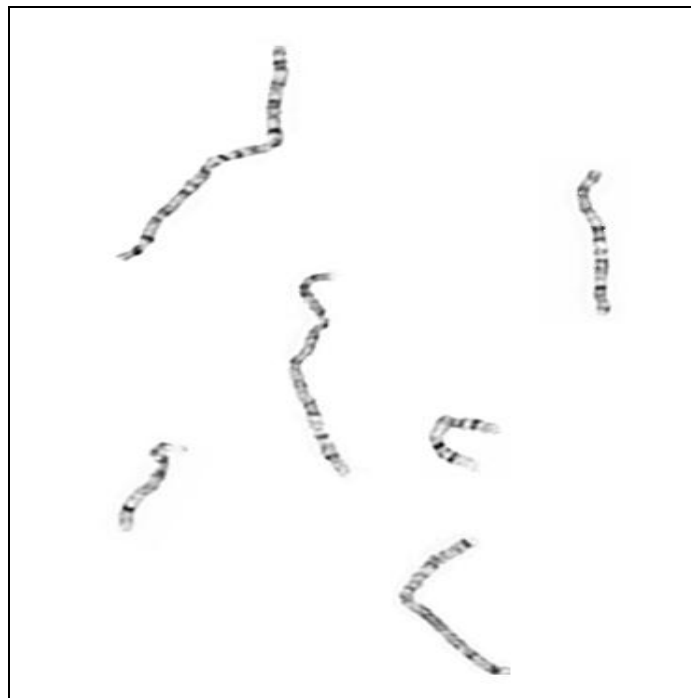
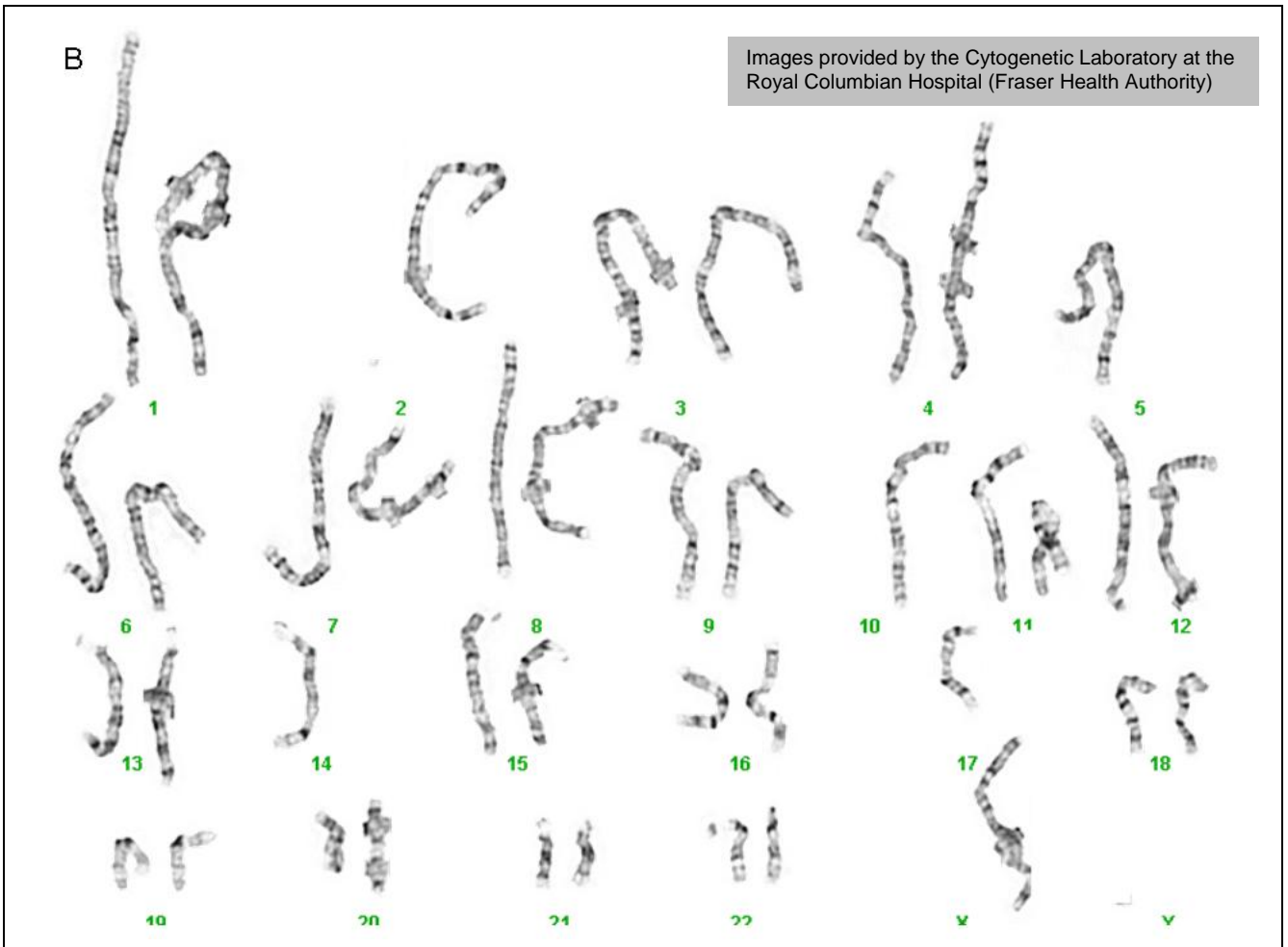
Sheets A and B are for practice. These two karyotypes have the normal complement of 46 chromosomes.

Sheets C through F are patient chromosomes that may or may not have 46 chromosomes.

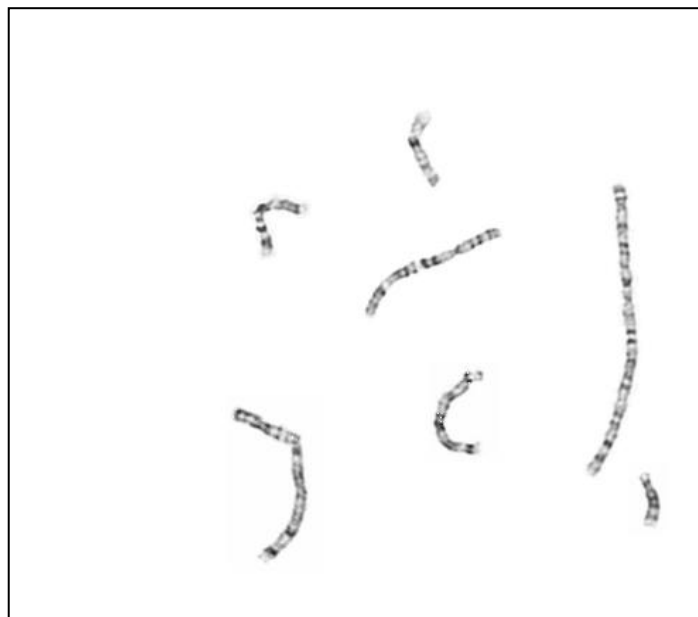
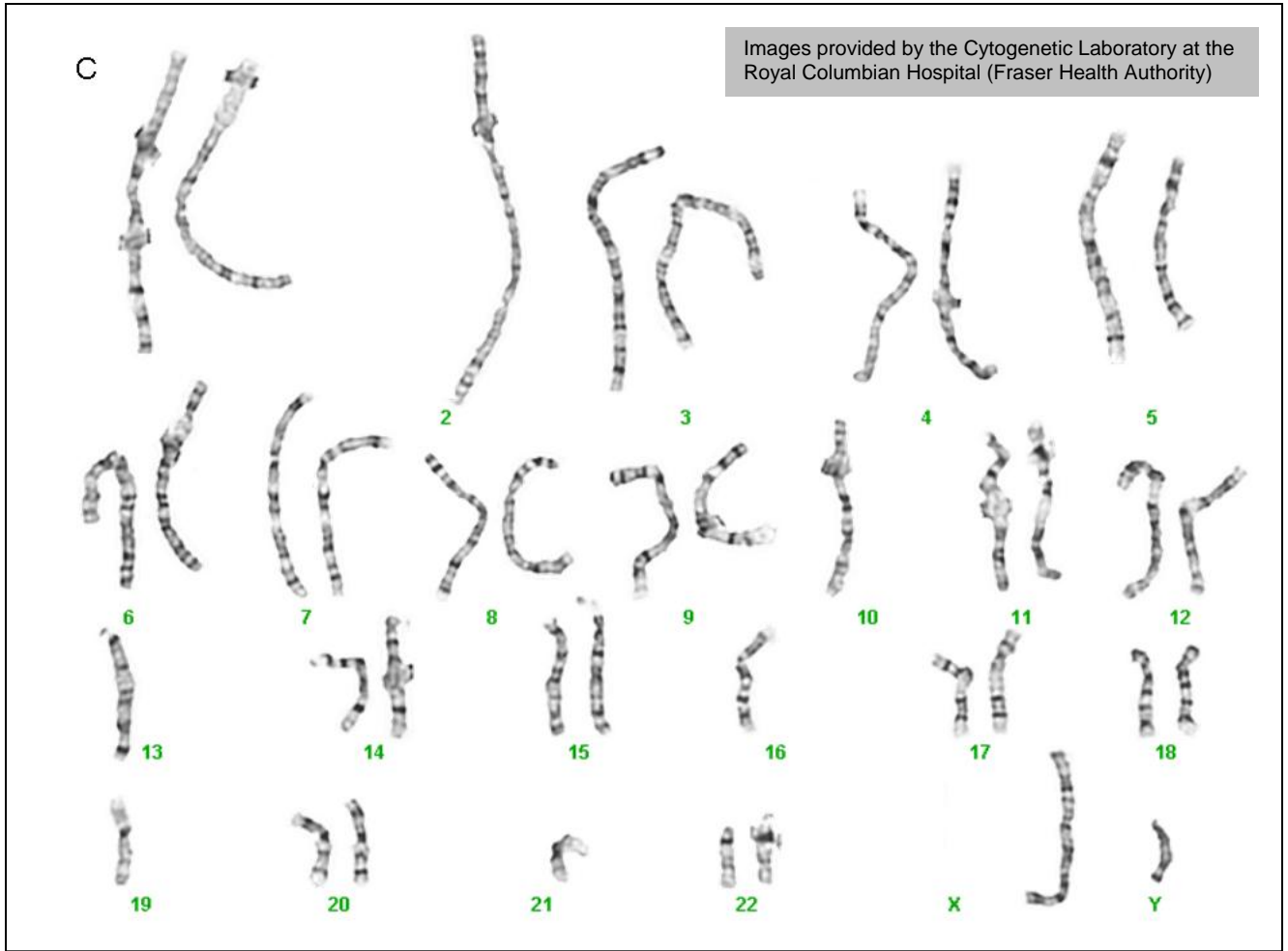
A



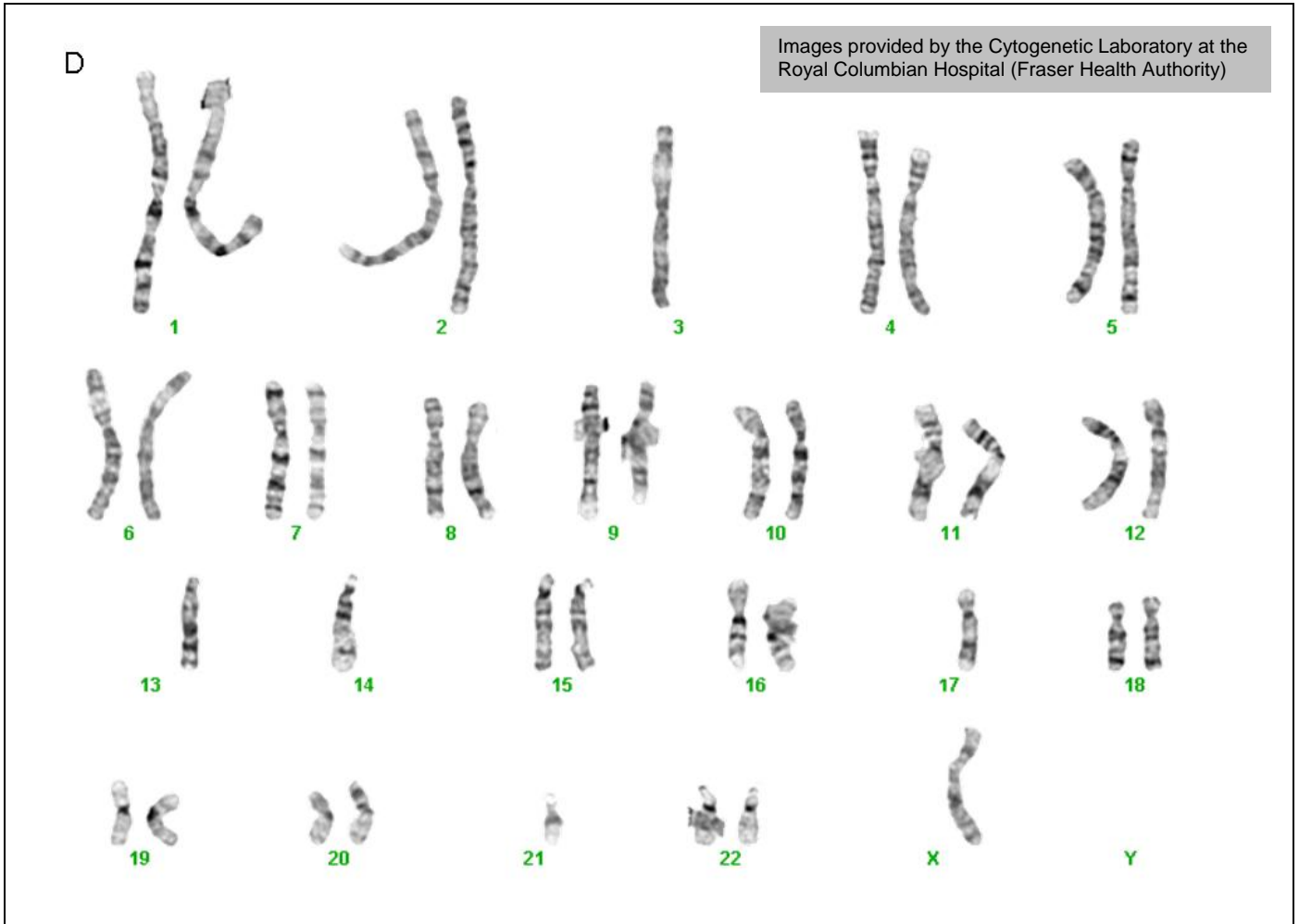
B



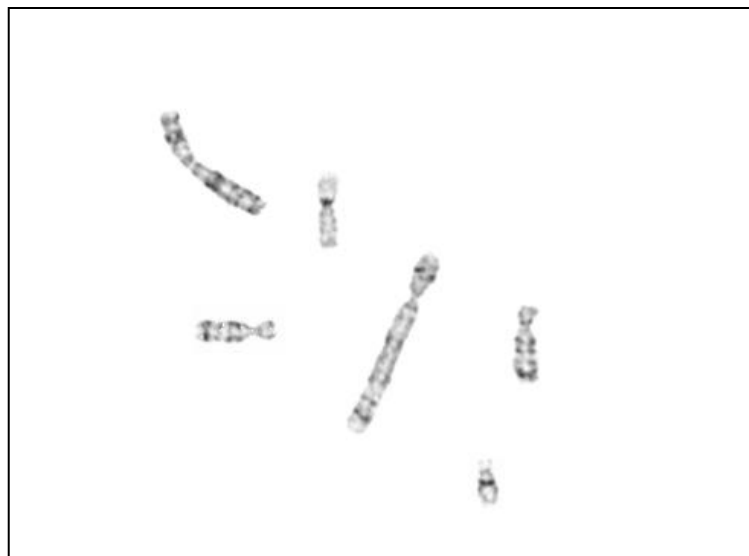
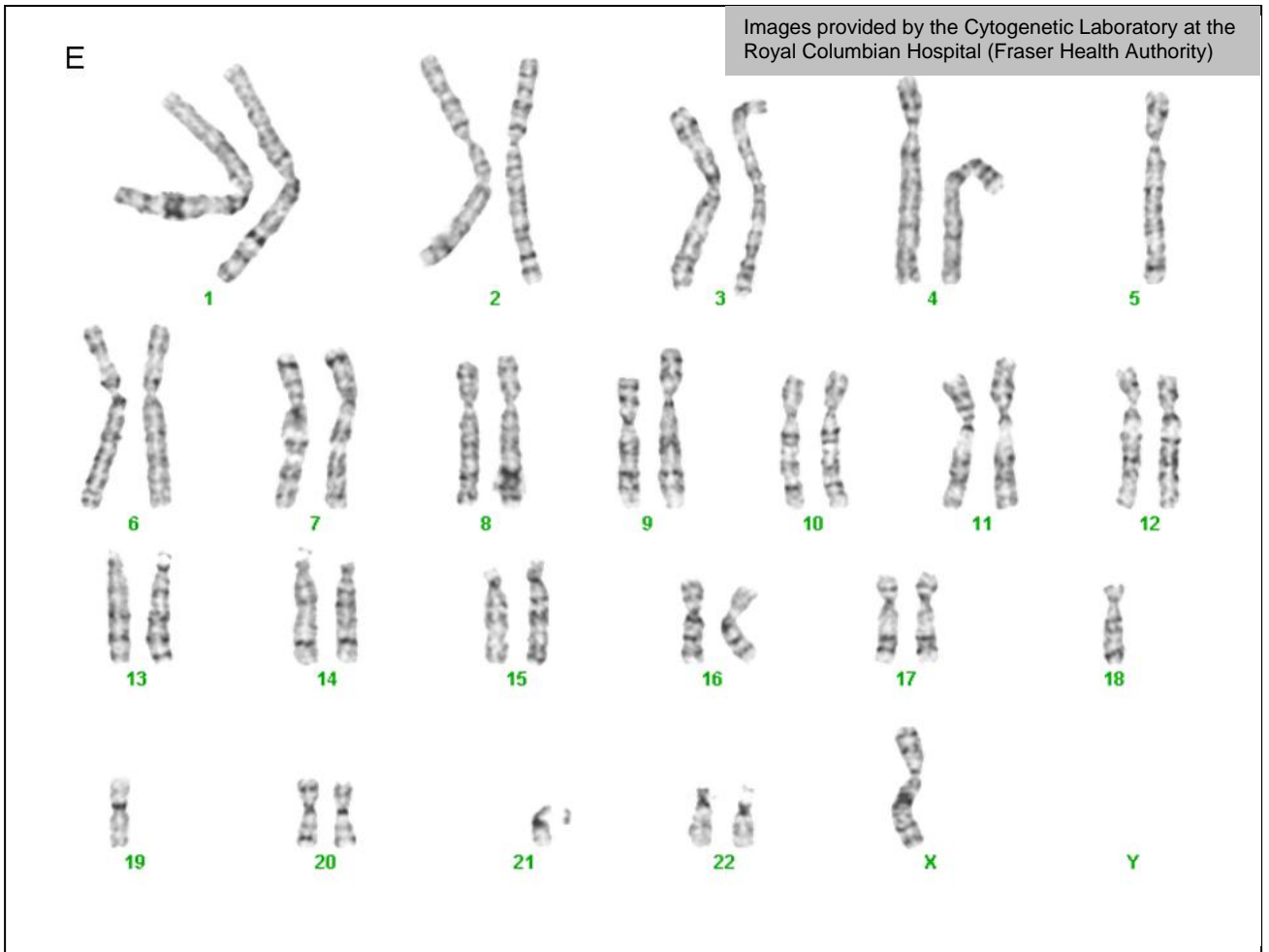
C



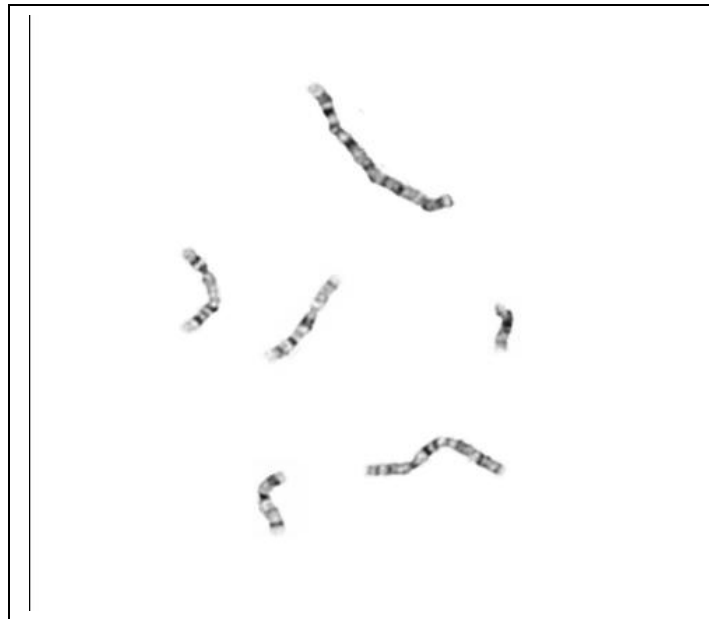
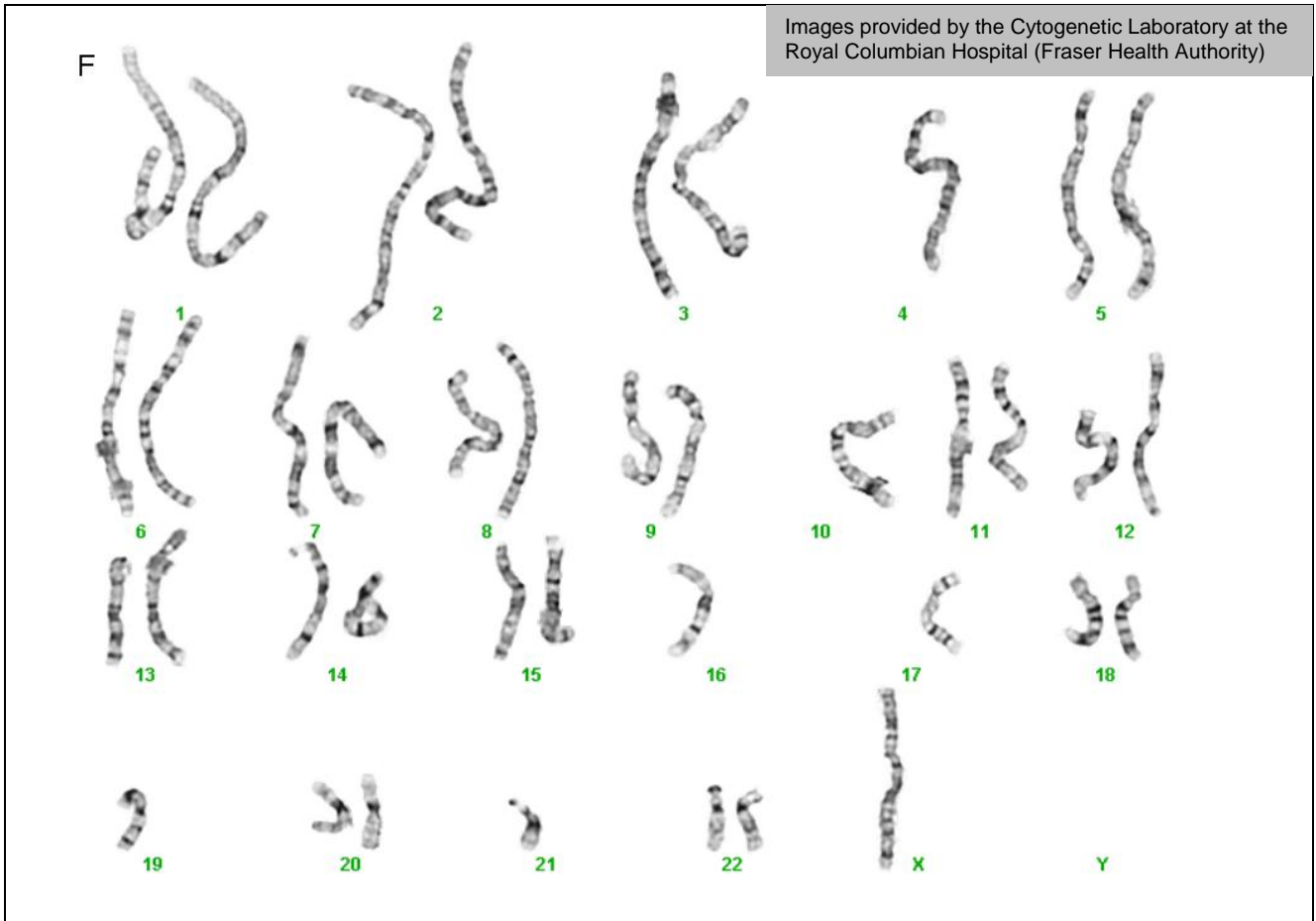
D



E



F



Chromosome Analysis

Part B:

The following sheets are reports that should confirm your results for karyotypes C to F.

The doctor has asked that you make a pamphlet for the patient that describes the condition. Your task is to research the condition, and make a pamphlet with the following information:

- Name of syndrome
- Cause of the syndrome (extra or missing chromosomes etc.)
- Common Physical Features
- Impact on Development (cognitive, motor, language etc)
- Treatment
- Life expectancy
- Impact of this condition on the affected person and their family



C2

CYTOGENETICS REPORT

CYTOGENETICS LABORATORY
DEPARTMENT OF PAHOLOGY AND LABORATORY
MEDICINE
LABORATORY GENETICS PROGRAM

Inquiries: 604 GEN ETIC

Dr. Moxy Michael
Fairview Medical Clinic
1234 ATCG Street
Vancouver, BC

Orley, Bob
DOB: 75/06/02
Care Card #: 9156 222 555

Collected: 05/06/14 10:30
Received: 05/06/15 10:00

Copy to: Dr. Wilson
Dr. Seuss

Tissue (s): Blood
Reason for Referral: Infertility

FINAL CYTOGENETIC ANALYSIS

Cytogenetic Analysis of cultured peripheral cells at 300 band resolution showed a 47, XXY karyotype (10 cells).

This test does not exclude subtle chromosomal rearrangements or low level mosaicism.

ISCN nomenclature: 47, XXY

Comments: This karyotype is consistent with a diagnosis of Klinefelter Syndrome.

D2

CYTOGENETICS REPORT

CYTOGENETICS LABORATORY
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MEDICINE
LABORATORY GENETICS PROGRAM

Inquiries: 604 GEN ETIC

Dr. Moxy Michael
Fairview Medical Clinic
1234 ATCG Street
Vancouver, BC

SMITH, Jane
DOB: 65/02/03
Care Card #: 9898 565 252

Collected: 05/06/14 10:30
Received: 05/06/15 10:00

Copy to: Dr. Wilson
Dr. Seuss

Tissue (s): Amniotic Fluid
Reason for Referral: Intrauterine Growth Retardation,
Cleft Lip seen on Ultrasound

FINAL CYTOGENETIC ANALYSIS

Cytogenetic Analysis of cultured amniocytes at 400 band resolution showed a 47, XX, +13 karyotype (10 cells).

This test does not exclude subtle chromosomal rearrangements or low level mosaicism.

ISCN nomenclature: 47, XX, +13

E2

CYTOGENETICS REPORT

CYTOGENETICS LABORATORY
DEPARTMENT OF PAHOLOGY AND LABORATORY
MEDICINE
LABORATORY GENETICS PROGRAM

Inquiries: 604 GEN ETIC

Dr. Moxy Michael
Fairview Medical Clinic
1234 ATCG Street
Vancouver, BC

SAUNDERS, Cynthia
DOB: 05/06/11
Care Card #: 2005 625 112

Collected: 05/06/14 10:30
Received: 05/06/15 10:00

Copy to: Dr. Wilson
Dr. Seuss

Tissue (s): Blood
Reason for Referral: Dysmorphic Features, clubbed feet,
clenched fists

FINAL CYTOGENETIC ANALYSIS

Cytogenetic Analysis of cultured peripheral cells at 500 band resolution showed a 47, XX, +18 karyotype (9 cells).

This test does not exclude subtle chromosomal rearrangements or low level mosaicism.

ISCN nomenclature: 47, XX, +18

F2

CYTOGENETICS REPORT

CYTOGENETICS LABORATORY
DEPARTMENT OF PAHOLOGY AND LABORATORY
MEDICINE
LABORATORY GENETICS PROGRAM

Inquiries: 604 GEN ETIC

Dr. Moxy Michael Fairview Medical Clinic 1234 ATCG Street Vancouver, BC	BEATTY, Julie DOB: 00/01/15 Care Card #: 9653 232 124 Collected: 05/06/14 10:30 Received: 05/06/15 10:00
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Copy to: Dr. Wilson
Dr. Seuss

Tissue (s): Blood
Reason for Referral: Webbed neck, short stature

FINAL CYTOGENETIC ANALYSIS

Cytogenetic Analysis of cultured peripheral cells at 500 band resolution showed a 45, X karyotype (11 cells).

This test does not exclude subtle chromosomal rearrangements or low level mosaicism.

ISCN nomenclature: 45, X

Comments: This karyotype is consistent with a diagnosis of Turner Syndrome.