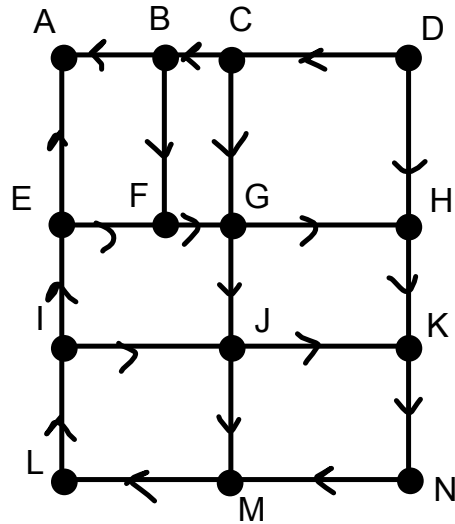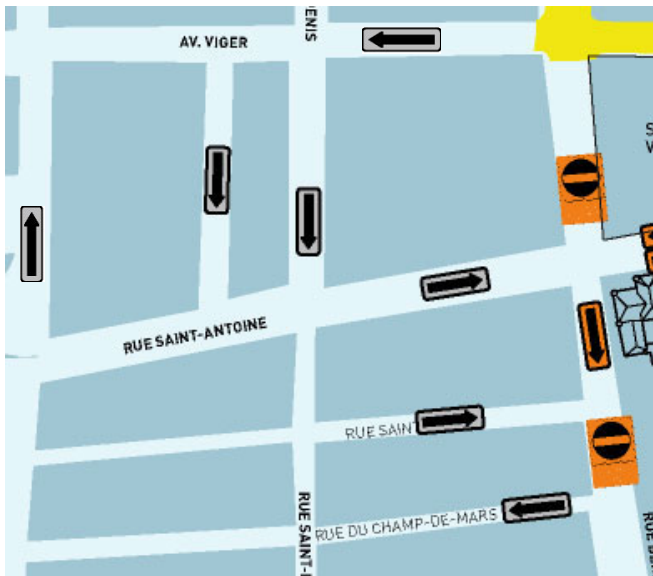# TYPES OF GRAPHS

Goal:

> - to become familiar with different types of graphs: trees, directed graphs and weighted graphs

New York and Montreal are well known for their one-way streets.
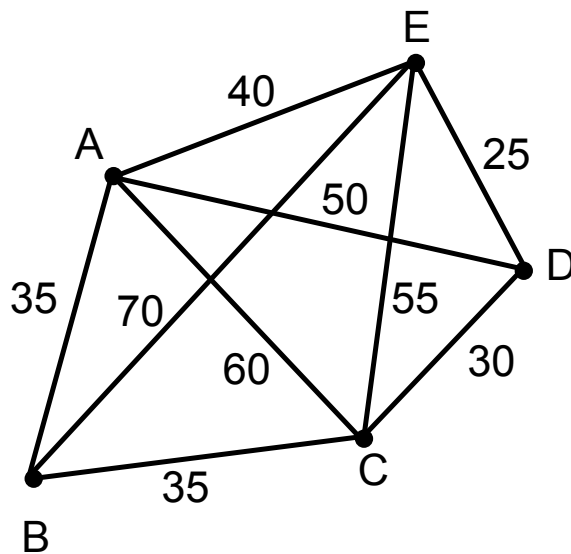

Describe the path from J to H.

JMLIEFGH

A *directed graph* is a graph where each edge has a specified direction.

Order of vertices matters

JM ✓

MJ ✗

Amazon is delivering packages to 4 customers.

E

40

A

25

50

D

35 70

55

60

30

35   C

B

Each edge has a value.

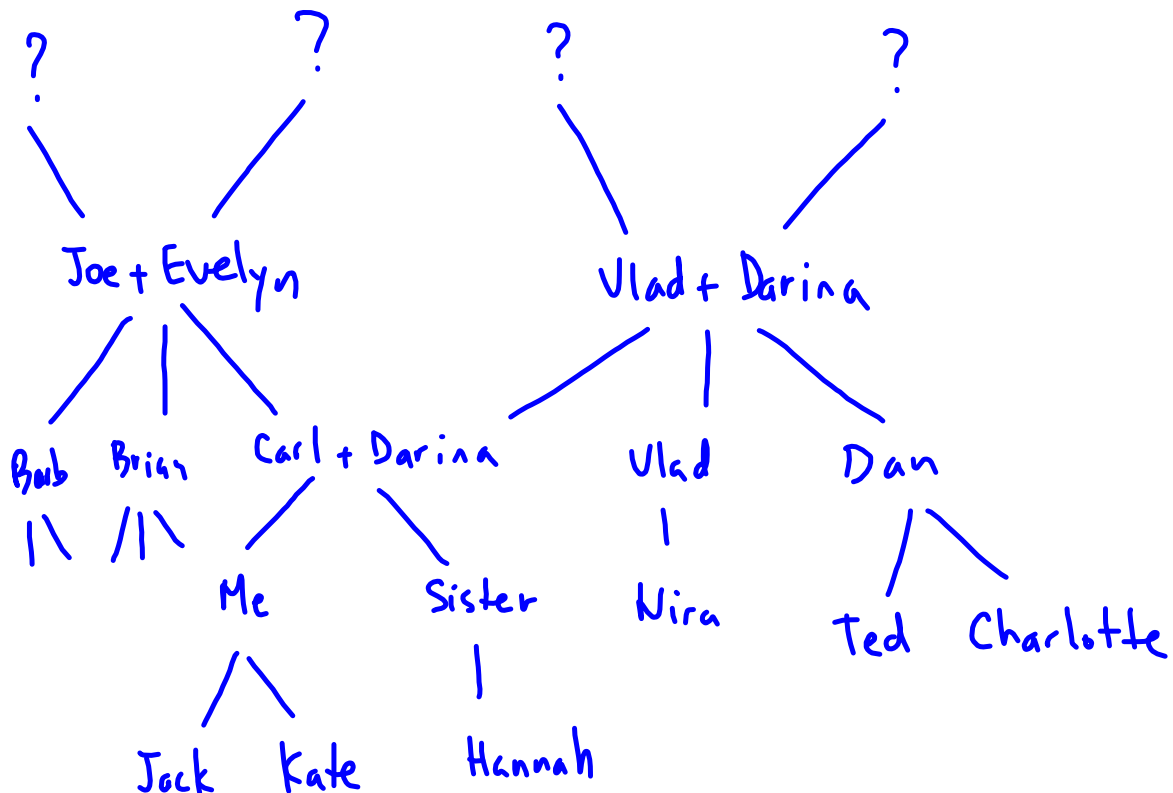Value can represent distance,

time, cost, ...

What is the best route to take?

ABCDEA has the lowest total value (165)

↑

Hamiltonian circuit

A *weighted graph* is a graph that has a numerical value associated with each *edge*.

Draw your family tree.

A *tree* is a type of graph. A *tree* is a *connected graph* that <u>does not</u> contain any *simple circuits*.