

Basics of Counting

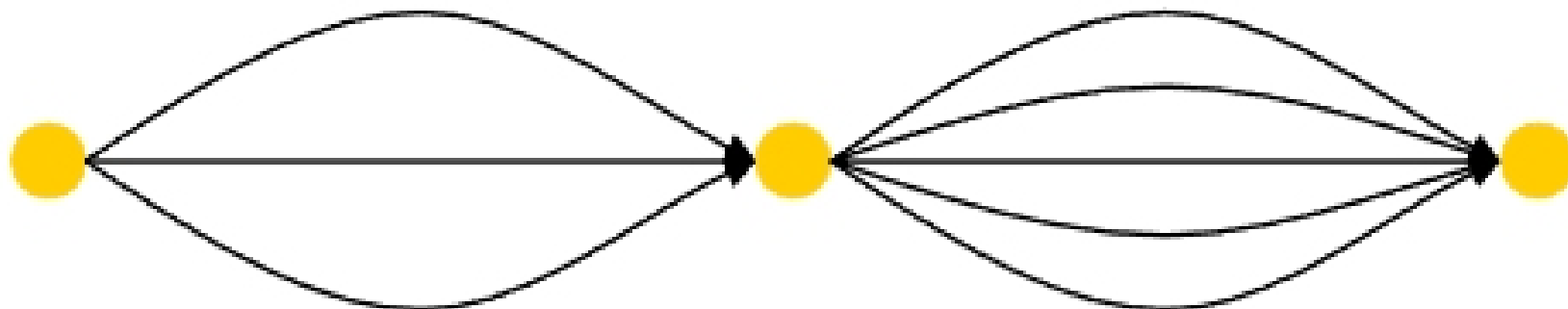
CS/APMA 202

Epp sections 6.2 & 6.3

Aaron Bloomfield

The product rule

- Also called the multiplication rule
- If there are n_1 ways to do task 1, and n_2 ways to do task 2
 - Then there are n_1n_2 ways to do both tasks in sequence
 - This applies when doing the “procedure” is made up of separate tasks
 - We must make one choice AND a second choice



Product rule example

- Sample question
 - There are 18 math majors and 325 CS majors
 - How many ways are there to pick one math major **and** one CS major?
- Total is $18 * 325 = 5850$