Tree Diagrams and Probability
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- When are probability values multiplied? ("and" ; × ; set *intersection*)
- When are probability values added? ("or" ; + ; set *union*)

Example: A jar contains three gold marbles, two black marbles, and two white ones. A marble is drawn out and not replaced. A second marble is then drawn out. What is the probability that both are gold?

I. Draw the tree diagram.

A. What experiment does the first stage represent?

B. What experiment does the second stage represent? Be sure to specify replacement or no replacement.

C. How is the probability for each final outcome calculated? Why?

D. What is the probability that at least one white marble will be drawn?

E. How was this probability calculated? Why?

F. What is the sample space for this experiment?

G. What is the probability that no white marble will be drawn?

H. Are there complementary events exemplified above? If yes, which questions are involved?