

Statistics 12, Homework 4

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Chapter 14, Problem 2

Let A be “likes to cook” and B be “likes to shop”. Then we have the following.

$$P(A) \cup P(B) = P(A) + P(B) - P(A \cap B) = 0.45 + 0.59 - 0.23 = 0.81$$

Chapter 14, Problem 4

$$\frac{38}{38 + 22} \approx 0.633$$

Chapter 14, Problem 6

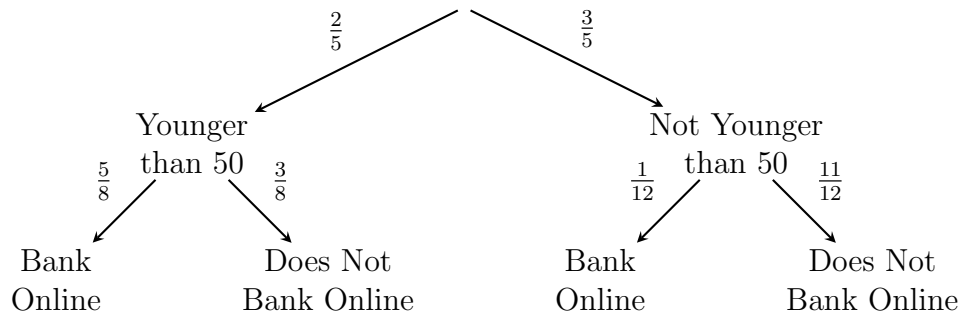
$$0.7 \times 0.9 = 0.63$$

Chapter 14, Problem 10

	Bank Online	Does Not Bank Online	Total
Younger than 50	0.25	0.15	0.4
Not Younger than 50	0.05	0.55	0.6
Total	0.3	0.7	1

A table is better than a tree here because it requires less calculation to use. Instead of having to multiply probabilities to arrive at the given percentages, the table presents the data in the same way that it's given to us.

Chapter 14, Problem 12



A tree is better than a table in this case because we are given conditional probabilities. So it is easier to express the probabilities in a way that matches the given data using a tree. The joint probabilities are found by multiplying the conditional probabilities as you travel down a path in the tree.

Chapter 14, Problem 14

$$\frac{\frac{2}{5} \times \frac{5}{8}}{\frac{2}{5} \times \frac{5}{8} + \frac{3}{5} \times \frac{1}{12}} \approx 0.8333$$

Chapter 15, Problem 6

Chapter 15, Problem 8

Chapter 15, Problem 12

Chapter 16, Problem 4

Chapter 16, Problem 6

Chapter 16, Problem 28