

A college library has five copies of a certain text on reserve. Two copies (1 and 2) are first printings, and the other three (3, 4, and 5) are second printings. A student examines these books in random order, stopping only when a second printing has been selected. One possible outcome is 4, and another is 125.

a) List all outcomes in the sample space S .

b) Let A denote the event that exactly one book must be examined. What outcomes are in A ?

c) Let B be the event that book 4 is the one selected. What outcomes are in B ?

d) Let C be the event that book 2 is not examined. What outcomes are in C ?

In this notation

a) $S = \{ 123, 124, 125, 213, 214, 215, 13, 14, 15, 23, 24, 25, 3, 4, 5 \}$

← 3rd book is 2nd ed.
← 2nd book is 2nd ed.
← 1st book is 2nd ed.

b) $A = \{ 3, 4, 5 \}$ Exactly 1 book is examined.

c) $B = \{ \underline{1}24, \underline{2}14, \underline{1}4, \underline{2}4, \underline{4} \}$ ← 4 is selected.

d) $C = \{ 13, 14, 15, 3, 4, 5 \}$ ← Book 2 is not selected.