

Question 1.3.3

Six new employees, two of whom are married to each other, are to be assigned six desks that are lined up in a row. If the assignment of employees to desks is made randomly, what is the probability that the married couple will have nonadjacent desks?

Solution: Let X be a Random variable such that

RV	Values	Description
X	0	couple not sitting adjacent
	1	couple sitting adjacent

$$p_X(1) = \frac{5! \times 2}{6!} \quad (1)$$

$$= \frac{1}{3} \quad (2)$$

$$p_X(0) = 1 - p_X(1) \quad (3)$$

$$= \frac{2}{3} \quad (4)$$