

Solution for exercise 2.1.14 in Pitman

Question a) The offspring will necessarily have (Tt, Pp) and will appear tall and purple.

Question b) All 9 possible combinations can occur (tt, pp) , (Tt, pp) , (TT, pp) , (tt, Pp) , (Tt, Pp) , (TT, Pp) , (tt, PP) , (Tt, PP) , (TT, PP) .

Question c) Tall with purple flowers occur in 9 of 16 equally likely combinations. The probability can be calculated by the Binomial distribution. The probability that we have at most 1 tall plant with purple flowers is 0.0278 thus the probability in question is 0.9722.