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STATISTICS FOR DATA SCIENCE

ASSIGNMENT 17

1. A certain brand of dinnerware set comes in three colors : red, white, and blue. Twenty percent of customers order the red set, 45% order the white, and 35% order the blue. Let X = 1 if a randomly chosen order is for a red set, let X = 0 otherwise; let Y = 1 if the order is for a white set, let Y = 0 otherwise; let Z = 1 if it is for either a red or white set, and let Z = 0 otherwise.
   1. Let  denote the success probability for X. Find .
   2. Let   denote the success probability for Y . Find  .
   3. Let  denote the success probability for Z. Find .
   4. Is it possible for both X and Y to equal 1?
   5. Does =  +  ?
   6. Does Z = X + Y? Explain.

Answer.

1. px= 20 / 100 = **0.20**
2. py= 45 / 100 = **0.45**
3. pz= 35 / 100 = **0.35**
4. **Yes**, it is possible for a person to order both red and white dinnerware set.
5. No,  !=  + 
6. No, Z !=X+Y as all of them are independent variables.