4th Assignment: Conditional Probability & Bayes Theorem

Undergraduate of Telecommunication Engineering

MUH1F3 - PROBABILITY AND STATISTICS

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1. There are four identical boxes (with same shapes, sizes and color), each box is filled with capacitors, the details are as follows:

	1st Box	2nd Box	3rd Box	4st Box
0.1 μF = 3 pcs	0.1 μF = 2 pcs	0.1 μF = 2 pcs	0.1 μF = 5 pcs
1.0 μF = 6 pcs	1.0 μF = 4 pcs	1.0 μF = 3 pcs	1.0 μF = 3 pcs

a. Draw the tree diagram for above situation !
b. Calculate the probability that a capacitor will be taken at random, and it turns out to be 0.1 μF?
c. Calculate the probability that a capacitor will be taken at random, and it turns out to be 1.0 μF?
d. A box is chosen randomly, then taken a capacitor. Chosen is a capacitor 0.1 μF. Calculate the probability of these capacitors coming from **2nd** box?
e. A box is chosen randomly, then taken a capacitor. Chosen is a capacitor 1.0 μF. Calculate the probability of these capacitors coming from **4th** box?

2. Faculty of Electrical Engineering - Telkom University will choose an outstanding student from 4 existing Study Programs, the candidates are:

	Telecommunication Eng	Electrical Eng	Physic Eng	Computer Eng
Male	4	4	3	2
Female	8	2	5	3

a. Draw the tree diagram for above situation !
b. A candidate is randomly selected to advance first during the interview selection, determine the chance that he is from the Physics Eng?
c. A candidate is randomly selected to advance first during the interview selection, determine the chance that he is a Male?

3. A TV company has three factories, yaitu **A**, **B** and **C** the percentage of each production is 15 %, 35 %, and 50 %. Each factory produces defective TV products, that is, respectively 1 % (**A**), 5 % (**B**), and 2 % (**C**).

   a. Draw the tree diagram for above situation !
   b. f a TV is taken at random from all available products, calculate the probability that the selected TV will be defective?
   c. A TV is taken at random and found in a defective, calculate the probability this TV coming from factory **B**'s production?