

Problem Wk.10.3.5: Buying a car

You're interested in buying a used car. Initially, you think the probability that it's good is 0.7. (It's either good or bad, in our simple model). So, we'll say $P(\text{good}) = 0.7$

A garage offers to test it for you. Their test will say either "pass" or "fail". Here is a table of how effective the test is:

$$P(\text{"pass"} \mid \text{good}) = 0.9$$

$$P(\text{"pass"} \mid \text{bad}) = 0.3$$

Enter your answers with three digits after the decimal point

1. What is $P(\text{"fail"} \mid \text{good})$
2. What is $P(\text{"pass"})$?
3. You pay for the test and they say the car passes. What is $P(\text{good} \mid \text{"pass"})$?

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