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PROBABILITY AND GEOMETRY TEST

4° ESO



Exercise 1: (1.25 ptos) Given the following events corresponding to a certain random experiment, $A = \{2,3,5,7\}$, $B = \{1,4,6,8\}$ and $C = \{6\}$, write the outcomes of the events:

a) $A \cup B =$

b) $A \cap B =$

c) $B \cup C =$

d) $B \cap C =$

e) $\overline{B} =$

Exercise 2: (2 ptos) I get three cards from a Spanish deck of cards, with replacement. Find the probability that:

- a) They are all cup cards
- b) I get two gold cards and a club card
- c) I don't get any face cards
- d) I get at least an ace

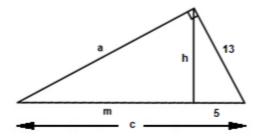
Exercise 3: (2 ptos) Given two events A and B so that $P(\overline{A}) = 0.3$, P(B) = 0.5 and $P(A \cup B) = 0.85$

- a) $P(A \cap B) =$
- b) P(B/A) =
- c) Are A and B independent events? Are they mutually exclusive? Why?

Exercise 4: (2 ptos) I have an urn with 4 magenta balls, 7 blue balls and 1 red ball. I get 2 balls without replacement. Find the probability that:

- a) Both balls are blue
- b) I get a red ball and a magenta one
- c) Both balls have different colors
- d) I get at least a blue ball

Exercise 5: (1 pto) Find the values of the sides of the triangle using the right triangle altitude theorems:



Exercise 6: (1.75 ptos) As of 05/21/2021, 60% of the vaccinated people in Spain had received the Pfizer's injection, 9% the Moderna's and the rest AstraZeneca's. 72% of the Pfizer's users, 43% of Moderna's and 0.01% of AstraZeneca's had already received the second dose too. Taken a random person find the probability that:

- a) They got the second dose
- b) They had received AstraZeneca knowing that they still didn't have the second dose

