Ex.14.
Homework 14

Section 7.1

Ex 22. $\frac{33}{100}$

Ex 24. a) $\frac{1}{C_{30}^{5}}$

b) $\frac{1}{C_{36}^{6}}$

Section 7.2

Ex.2 As for number "1, 2, 4, 5, 7 6", the probability is $\frac{1}{7}$

As for number "3", the probability is $\frac{2}{7}$

Ex.16. We just need to ~~identy~~ identify that $P(\bar{E}\cap\bar{F}) = P(\bar{E})\cdot P(\bar{F})$

It's clear that: $P(\bar{E}\cap\bar{F}) = P(\overline{E\cup F})$

$= 1 - P(E\cup F)$

$= 1 - (P(E) + P(F) - P(E\cap F))$

$= 1 - P(E) - P(F) + P(E\cap F)$

$= 1 - P(E) - P(F) + P(E)\cdot P(F)$

$= (1-P(E))\cdot(1-P(F))$

$= P(\bar{E})\cdot P(\bar{F})$

Then we prove it completely

* Section 7.3 $P(E|F) = \frac{P(E\cap F)}{P(F)}$

$= P(F|E)\cdot \frac{P(E)}{P(F)}$

Ex.2

$P(E|F) = \frac{P(F|E)\cdot P(E)}{P(F|E)\cdot P(E) + P(F|\bar{E})\cdot P(\bar{E})}$

$= \frac{\frac{5}{8}\cdot\frac{2}{3}}{\frac{5}{8}\cdot\frac{2}{3} + \frac{3}{8}\cdot\frac{1}{3}}$

$= \frac{10}{13}$

$= \frac{\frac{5}{8}\times\frac{2}{3}}{\frac{3}{4}}$

$= \frac{5}{9}$

Ex.6. Suppose "E" be the event that the person tests positive that eat steroid

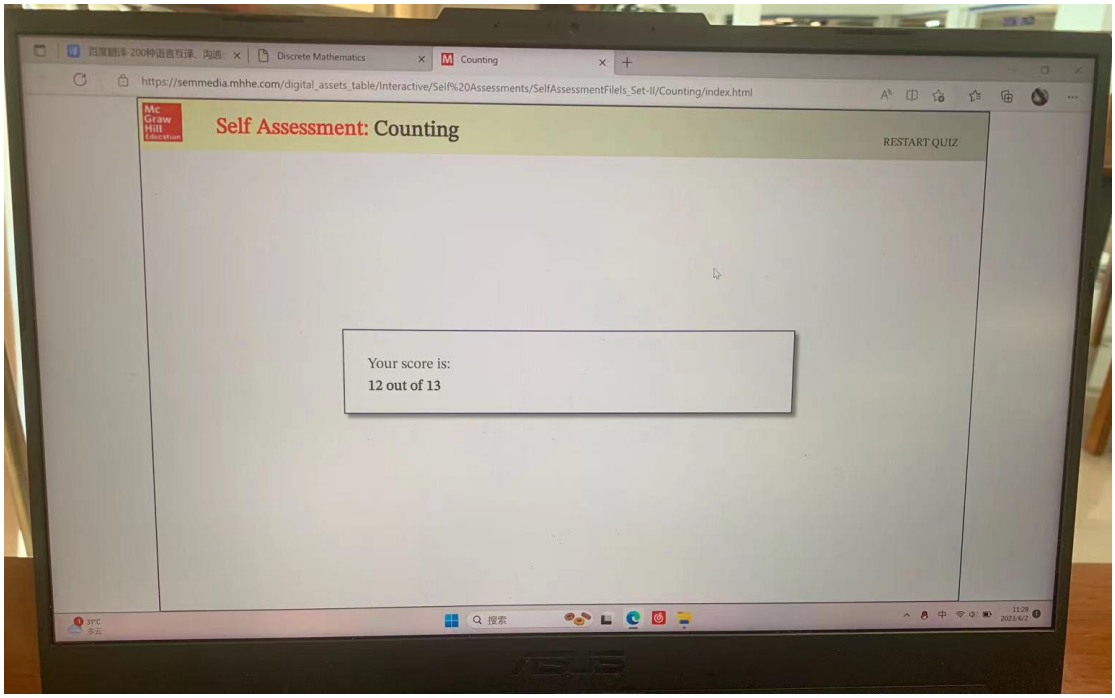
"D" be the event that player takes steroid

$P(D|E) = \frac{P(E|D)P(D)}{P(E|D)P(D) + P(E|\bar{D})\cdot P(\bar{D})} = \frac{(0.98)(0.05)}{(0.98)(0.05) + (0.12)(0.95)}$

we know: $P(D) = 0.05$, $P(\bar{D}) = 0.95$

~~$P(E) = 0.98$~~ $P(E|D) = 0.98$

$P(\bar{E}|\bar{D}) = 0.12$


Discrete Mathematics
Counting
https://semmedia.mhhe.com/digital_assets_table/Interactive/Self%20Assessments/SelfAssessmentFiles_Set-II/Counting/index.html
Self Assessment: Counting
RESTART QUIZ
Your score is:
12 out of 13