

Sample space

Israel
No lab
Week 2
HW

6 computer chips \Rightarrow 2 chosen at random
1 set of 2 \Rightarrow Defective
 \Rightarrow Non Defective

$\Rightarrow \{$ NN, NN, DN, NN, DN,
ND, ND, DN, NN, DN,
NN, NN, DN, ND, DD
NN, NN, DN, NN, DN
ND, ND, DD, ND, DN $\}$

1) Quiz 6 multiple choice, each question 4 possible answers

1) $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

2) 1) all correct $\Rightarrow (\frac{1}{4})^6 \Rightarrow \frac{1}{4096}$

3) $\binom{6}{k} \Rightarrow (\frac{1}{4})^k (\frac{3}{4})^{6-k}$

4) $\binom{6}{4} \Rightarrow (\frac{1}{4})^4 (\frac{3}{4})^{6-4} \Rightarrow (\frac{1}{4})^4 (\frac{3}{4})^2 = .00219$

5) $\binom{6}{5} \Rightarrow (\frac{1}{4})^5 (\frac{3}{4})^{6-5} \Rightarrow (\frac{1}{4})^5 (\frac{3}{4})^1 \Rightarrow .00073$

6) $\binom{6}{6} \Rightarrow (\frac{1}{4})^6 (\frac{3}{4})^{6-6} \Rightarrow (\frac{1}{4})^6 (\frac{3}{4})^0 \Rightarrow .00024$

probability $\Rightarrow 0.00973 \Rightarrow 0.973\%$

5 independent Test

16 error $\Rightarrow 0.1, 0.2, 0.3, 0.4, 0.5$

$$3) P(A' \cap B' \cap C' \cap D' \cap E') \Rightarrow (.1)(.2)(.3)(.4)(.5) \Rightarrow$$

$$P \Rightarrow 1 - (.9)(.8)(.7)(.6)(.5) \Rightarrow$$

$$P = 1 - 0.1512 \Rightarrow 0.8488 \Rightarrow 84.88\%$$

4) All five times

$$P((0.1)(0.2)(0.3)(0.4)(0.5)) \Rightarrow 0.0012 \Rightarrow 0.12\%$$