Tutorial 11

Problem 18.2

(a) Since he places the two bullets randomly,

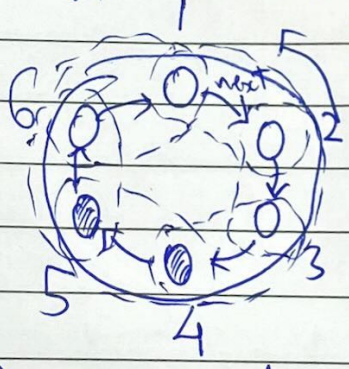
$$P(\text{getting shot}) = \frac{\text{No. of bullets placed}}{\text{Cylinder capacity}} = \frac{2}{6} = \frac{1}{3}\ //$$

(b) After firing first and not getting shot, the two bullets can be in any of the other 5 chambers as they were randomly placed.

$$\therefore P(\text{getting shot on } 2^{nd} \text{ fire} \mid \text{not shot on } 1^{st} \text{ fire}) = \frac{2}{5}\ //$$

(c) Dirty Harry randomly spins the ~~barrel~~ cylinder, so again, the bullet being in the chamber to be fired has the same probability. $= 1/3\ //$

Consider ~~pair~~ adjacent chambers pairs in a ~~the~~ ~~bullet~~ the cylinder



~~barrel~~ cylinder rotation

There are six such pairs

On first firing and not getting shot, their is only one out of the six pairs above that have a bullet to be fired in second shot, here the ~~3-4~~ pair.

$$\therefore P(\text{getting shot on } 2^{nd} \text{ fire} \mid \text{Not shot on } 1^{st} \text{ fire}) = \frac{1}{6}\ //$$