

$$\begin{aligned}
 Q1) P &= \binom{n}{k} p^k (1-p)^{n-k} \\
 &= \binom{n}{k=0, \text{you missed all shots}} p=0.1 \\
 &= \binom{n}{0} 0.1^0 0.9^n \\
 &= \binom{n}{0} 0.9^n
 \end{aligned}$$

$$n=15, p=0.21 \Rightarrow 1-p=0.79$$

$$n=16, p=0.19 \Rightarrow 1-p=0.81$$

$$\begin{aligned}
 Q1) 10 &\Rightarrow 00001010 \\
 1 &\Rightarrow 00000001 \\
 5 &\Rightarrow 00000101 \\
 65 &\Rightarrow 01000001
 \end{aligned}$$

It will send the packet to 10.1.5.64/29 as most bits match the destination and thus the packet will be sent to the s0 interface.

$$Q2) 131 \Rightarrow 10000011$$

$$23 \Rightarrow 00010111$$

$$153 \Rightarrow 10010111$$

$$76 \Rightarrow 01001100$$

It will go to the 1 output interface as the most bits match from 131.22.0.0/15 to 131.23.151.76 in comparison to other prefixes

- Q3)
1. Next Hop D
 2. Next Hop C
 3. Next Hop D