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1. No, even if all the individual links were completely reliable, this would not gravantee that the end-to-end communication between hosts was reliable.

2. Because the querying host does not know which adapter address corresponds to the IP address in question.

   For the response, the sending node knows the adapter address to which the response should be sent, so there is no need to send a broadcast frame.

3. $\frac{1}{2^5} = \frac{1}{32}$ , $4 \times 512$ bit $\times$ 0.1 ms = 204.8 ms

4. D 補 3 個 0 ⇒ 1101011011000

   D / G = 商 … 101

   R = 101 , 1101011011101

5. (a) $E(p) = Np(1-p)^{N-1}$ , $E(p) = N(1-p)^{N-1} - NP(N-1)(1-p)^{N-2} = 0$

   $E'(p) = 0 \rightarrow p^* = \frac{1}{N}$ #

   (b) $E(p^*) = N \times \frac{1}{N}(1-\frac{1}{N})^{N-1} = \frac{(1-\frac{1}{N})^N}{1-\frac{1}{N}}$

   $\lim_{N\to\infty} \frac{(1-\frac{1}{N})^N}{1-\frac{1}{N}} = \frac{1}{e}$