# HW 3.1 - The Network Layer

* R5:
  1. Guaranteed delivery (with bounded delay)
  2. In-order packet delivery
  3. Guaranteed minimal bandwidth
* R6:
  1. Software: Routing processor, control plane
     + Processor stores information and executes protocols
  2. Hardware: Ports and switch fabric, data plane
     + Physical layer, connects to physical infrastructure
* R7:
  1. Forwarding information can be made locally at each port without invoking routing processor on a per-packet basis
* R12:
  1. Packet loss will occur when no memory is available to store arriving packets. If the switching fabric is faster, the queue fills up slower
* R13
  1. Where, at an output port, a queued packet in an input queue must wait for transfer through the fabric because it blocked by another pocket at the head of the line
* P1:

|  |  |
| --- | --- |
| Destination address | Interface |
| H3 | 3 |

* 1. No – based on destination address
* P2:
  1. No, only one allowed at a time
  2. Yes
  3. No
* P3:
  1. (n-1)D
  2. (n-1)D
  3. 0
* P6:
  1. 64, 0-63
  2. 32, 64-95
  3. 96, 96-191
  4. 64, 192-255
* P14:
  + (2400 – 20) / 680 = 4 fragments