CompTIA Network+ (N10-009) Cheat Sheet

One-page cram sheet for networking fundamentals, implementation, operations, security, and troubleshooting.

Best for	Focus	Use with
Last review before mini-tests or exam drills	Concept links + protocol purpose + troubleshooting logic	Use with ports sheet and commands sheet

1. Core models and traffic flow

OSI vs TCP/IP	Know the OSI layers for troubleshooting logic, but think in TCP/IP when mapping real protocols and services.
Encapsulation	Data moves from application data to frames and bits on send, then reverses on receive.
MAC vs IP	MAC is local delivery inside a LAN; IP is logical end-to-end addressing across networks.
Broadcast vs collision domains	Routers break broadcast domains; switches usually break collision domains per port.

2. Addressing and segmentation

CIDR / subnetting	Be fast at host counts, network ranges, usable addresses, and why VLSM saves address space.
VLAN	Use VLANs to segment traffic by role, department, or security need without separate physical switches.
Inter-VLAN routing	Traffic between VLANs needs Layer 3 routing through a router or multilayer switch.
NAT / PAT	NAT translates addresses; PAT multiplexes many private hosts through one public address using ports.

3. Key protocols

DHCP	Automatically leases IP settings; DORA sequence is a common exam point.
DNS	Resolves names to records like A, AAAA, CNAME, MX, and PTR.
ARP / ND	ARP maps IPv4 to MAC; Neighbor Discovery handles similar functions in IPv6.
SNMP / Syslog / NTP	Know monitoring, logging, and time sync roles because operations questions mix them together.

4. Wireless and security basics

2.4 GHz vs 5/6 GHz	2.4 GHz reaches farther but is noisier; 5/6 GHz is faster with more channels but shorter range.
WPA2 vs WPA3	Prefer WPA3 where supported; know SAE, stronger protection, and legacy fallback limits.

802.1X / RADIUS	Enterprise Wi-Fi commonly uses 802.1X for port-based authentication backed by RADIUS.
ACL and segmentation	Use least privilege on networks too: segment traffic and allow only what must pass.

5. Operations and troubleshooting

Baselines	Normal performance values help you spot anomalies in bandwidth, errors, latency, and jitter.
High availability	Redundancy, LACP, VRRP/HSRP concepts, and failover reduce single points of failure.
Change control	Document the reason, risk, rollback, validation, and communication plan before production changes.
Methodology	Identify the problem, form a theory, test it, plan and implement, verify, then document.