

QUICK-REFERENCE REVIEWER

Cert Cheat-Sheet & Reviewer Pack

The tables and facts you keep forgetting — subnetting, ports, OSI, commands, and flashcards. Printable and phone-friendly.

A+ / Network+ Essentials

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**READ ME
FIRST**

How to use this pack

This isn't a lesson — it's a reviewer. Keep it open while you practice, and skim it the night before an exam.

Everything here shows up again and again on CompTIA A+ and Network+, plus in real IT work. Don't just read it — cover an answer, test yourself, then check. Repeat until it's automatic.

BEST WAY TO REVIEW

Print the subnetting and ports pages and stick them near your desk. Repetition beats cramming — a few minutes daily wins.

Subnetting cheat sheet

The one topic that scares everyone — but it's just a few tables you memorize.

Subnet mask reference (single octet)

Mask	Binary	CIDR bits	Block size
0	00000000	0	256
128	10000000	1	128
192	11000000	2	64
224	11100000	3	32
240	11110000	4	16
248	11111000	5	8
252	11111100	6	4
254	11111110	7	2
255	11111111	8	1

THE RULE

mask + block size = 256. Memorize the "magic numbers": 128, 192, 224, 240, 248, 252, 254, 255.

Common CIDR → hosts

CIDR	Subnet mask	Usable hosts
/24	255.255.255.0	254
/25	255.255.255.128	126
/26	255.255.255.192	62
/27	255.255.255.224	30
/28	255.255.255.240	14
/29	255.255.255.248	6
/30	255.255.255.252	2

Usable hosts = block size – 2 (one network address, one broadcast).

Ports & protocols

If you memorize one table for Network+, make it this one.

Port	Protocol	What it does
20/21	FTP	File transfer (data / control)
22	SSH / SFTP	Secure remote access & transfer
23	Telnet	Remote access (insecure)
25	SMTP	Sending email
53	DNS	Name → IP resolution
67/68	DHCP	Automatic IP addressing
69	TFTP	Trivial file transfer
80	HTTP	Web (unencrypted)
110	POP3	Receiving email (download)
123	NTP	Time synchronization
143	IMAP	Receiving email (sync)
161/162	SNMP	Network monitoring
389	LDAP	Directory services
443	HTTPS	Web (encrypted / TLS)
445	SMB	Windows file sharing
3389	RDP	Remote Desktop

OSI model & key IP facts

OSI layers (7 → 1)

#	Layer	Example
7	Application	HTTP, DNS, SMTP
6	Presentation	TLS, encoding, encryption
5	Session	Session setup/teardown
4	Transport	TCP, UDP (ports)
3	Network	IP, routers (packets)
2	Data Link	MAC, switches (frames)
1	Physical	Cables, signals (bits)

MNEMONIC (7→1)

All People Seem To Need Data Processing.

Private & special IP ranges

Range	Use
10.0.0.0/8	Private (large networks)
172.16.0.0/12	Private (medium)
192.168.0.0/16	Private (home/small office)
169.254.0.0/16	APIPA (no DHCP reply)
127.0.0.0/8	Loopback (localhost)

Essential commands

The troubleshooting commands you'll actually type on the job.

Windows	Linux/macOS	What it does
ipconfig	ip a / ifconfig	Show IP configuration
ping	ping	Test reachability
tracert	tracert	Trace the path to a host
nslookup	dig / nslookup	Query DNS
netstat -an	netstat / ss	Show active connections
arp -a	arp / ip neigh	Show MAC ↔ IP table
ipconfig /flushdns	—	Clear DNS cache

ON THE JOB

When "the internet is down," check in order: link/cable → IP (ipconfig) → gateway (ping) → DNS (nslookup). Bottom-up beats guessing.

Rapid-fire flashcards

Cover the answer, say it out loud, then check.

Q: Difference between TCP and UDP?

A: TCP = reliable, connection-oriented (handshake). UDP = fast, connectionless, no guarantee.

Q: What does DHCP do?

A: Automatically assigns IP address, subnet mask, gateway, and DNS to devices.

Q: What does DNS do?

A: Resolves domain names (google.com) to IP addresses.

Q: Default gateway — what is it?

A: The router IP a device uses to reach other networks / the internet.

Q: APIPA address range and meaning?

A: 169.254.x.x — device got no DHCP reply (a red flag).

Q: Switch vs. router?

A: Switch connects devices within a LAN (Layer 2). Router connects different networks (Layer 3).

Q: HTTP vs. HTTPS ports?

A: HTTP = 80, HTTPS = 443 (encrypted with TLS).

Q: What is a MAC address?

A: A unique 48-bit hardware address burned into a NIC (Layer 2).

Keep going

Review a little every day and this becomes second nature.

Want the full walkthroughs?

This pack is the quick reference. For the "why" behind each topic, check the free videos and the other guides.

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