ITNET03 Activity 7.1
Routing Practice

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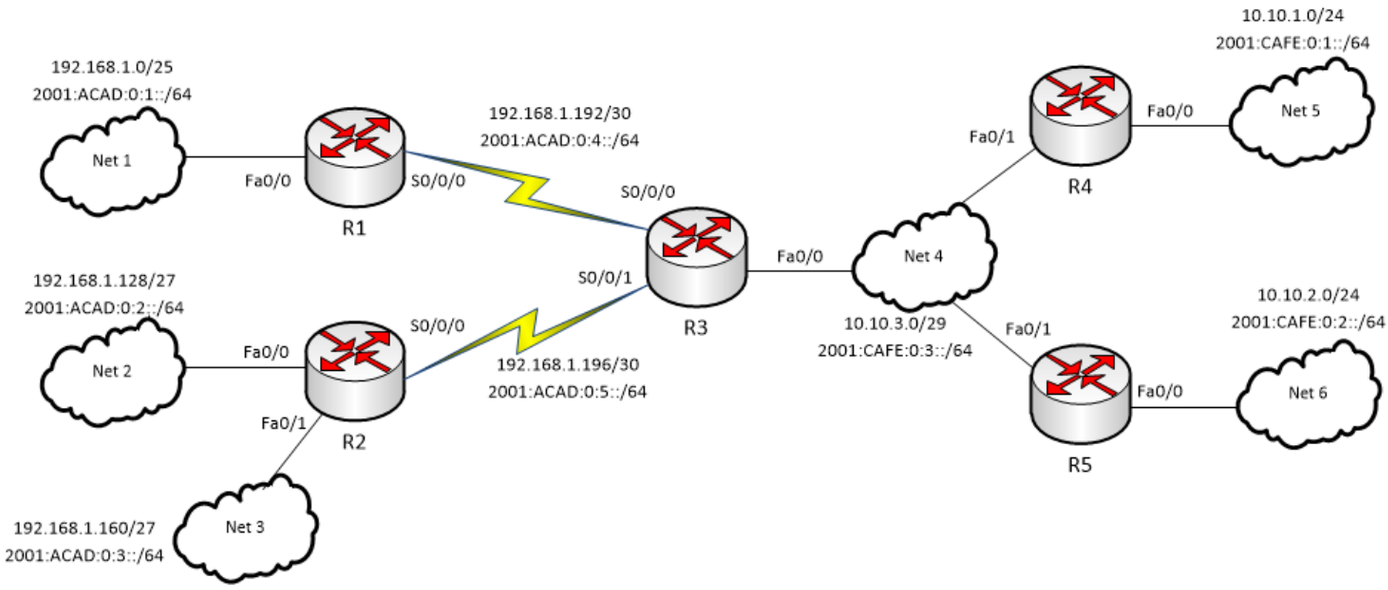
	Part 2		/16
	Total:		/ 48

Part 1: Provide the complete IPv4 routing table of R3 and IPv6 routing table of R5. Include all directly connected and remote networks. For each route, provide the destination network, exit interface and next hop address if applicable.



Device	Interface	IPv4 Address	IPv6 Address
R1	Fa0/0	192.168.1.1/25	2001:ACAD:0:1::1/64
	S0/0/0	192.168.1.193/30	2001:ACAD:0:4::1/64
R2	Fa0/0	192.168.1.129/27	2001:ACAD:0:2::1/64
	Fa0/1	192.168.1.161/27	2001:ACAD:0:3::1/64
	S0/0/0	192.168.1.197/30	2001:ACAD:0:5::1/64
R3	Fa0/0	10.10.3.1/29	2001:CAFE:0:3::1/64
	S0/0/0	192.168.1.194/30	2001:ACAD:0:4::2/64
	S0/0/1	192.168.1.198/30	2001:ACAD:0:5::2/64
R4	Fa0/0	10.10.1.1/24	2001:CAFE:0:1::1/64
	Fa0/1	10.10.3.2/29	2001:CAFE:0:3::2/64
R5	Fa0/0	10.10/2/1/24	2001:CAFE:0:2::1/64
	Fa0/1	10.10.3.3/29	2001:CAFE:0:3::3/64

R3 IPv4 Routing Table

Destination Network	Next Hop	Exit Interface
192.168.1.0/25	192.168.1.193	S0/0/0
192.168.1.128/27	192.168.1.197	S0/0/1
192.168.1.160/27	192.168.1.197	S0/0/1
192.168.1.192/30	N/A	S0/0/0
192.168.1.196/30	N/A	S0/0/1
10.10.1.0/24	10.10.3.2	Fa0/0
10.10.2.0/24	10.10.3.3	Fa0/0
10.10.3.0/29	N/A	Fa0/0

R5 IPv6 Routing Table

Destination Network	Next Hop	Exit Interface
2001:ACAD:0:1::/64	2001:CAFE:0:3::1	Fa0/1
2001:ACAD:0:2::/64	2001:CAFE:0:3::1	Fa0/1
2001:ACAD:0:3::/64	2001:CAFE:0:3::1	Fa0/1
2001:ACAD:0:4::/64	2001:CAFE:0:3::1	Fa0/1
2001:ACAD:0:5::/64	2001:CAFE:0:3::1	Fa0/1
2001:CAFE:0:1::/64	2001:CAFE:0:3::2	Fa0/1
2001:CAFE:0:2::/64	N/A	Fa0/0
2001:CAFE:0:3::/64	N/A	Fa0/1

Part 2: Given the routing table of a router below, answer the following questions regarding how the router forwards packets it receives:

Route	Destination	Next Hop	Exit Interface
A	10.10.0.0/20	10.10.6.6	S0/0/1
B	10.10.1.0/25	-	Fa0/1
C	10.10.1.128/25	-	Fa0/0
D	10.10.2.0/23	10.10.1.2	Fa0/1
E	10.10.4.0/23	10.10.6.2	S0/0/0
G	10.10.6.4/30	-	S0/0/1

Questions:

1. Which **route/s** is/are considered matched (not necessarily longest) to a packet with destination address 10.10.2.100?	Routes A and D
2. Which **exit interface** is used to forward a packet to destination 10.10.5.5?	S0/0/0 of Route E
3. Which **route** will be used to forward a packet to destination 10.10.1.50?	Route B
4. Can route B be used to forward a packet to 10.10.1.250?	No
5. Which **exit interface** will be used to forward a packet to 10.10.10.10?	S0/0/1 of Route A
6. Which **route** will be used to forward a packet to 10.10.6.2?	Route A

7. Assuming that the router has no other routes in its table, what will it do with a packet for destination 10.10.3.96?

   The router will use Route D to forward the packet for destination 10.10.3.96.

8. Assuming that the router has no other routes in its table, what will it do with a packet for destination 10.10.30.0?

   The router will drop it since there is no route in the router that matches 10.10.30.0 and there is no gateway of last resort configured for the router.