**Background / Scenario**

With the depletion of the Internet Protocol version 4 (IPv4) network address space and the adoption and transition to IPv6, networking professionals must understand how both IPv4 and IPv6 networks function. Many devices and applications already support IPv6. This includes workstation/server operating system support, such as that found in Windows and Linux.

Instructions

# Step 1: Match the IPv6 address to its type.

Match the IPv6 addresses to their corresponding address type. Notice that the addresses have been compressed to their abbreviated notation and that the slash network prefix number is not shown. Some answer choices **must** be used more than once.

Answer choices:

1. Loopback address
2. Global unicast address
3. Link-local address
4. Unique-local address
5. Multicast address

| **IPv6 Address** | **Answer** |
| --- | --- |
| 2001:0db8:1:acad::fe55:6789:b210 | Global unicast address |
| ::1 | Loopback address |
| fc00:22:a:2::cd4:23e4:76fa | Unique-local address |
| 2033:db8:1:1:22:a33d:259a:21fe | Global unicast address |
| fe80::3201:cc01:65b1 | Link-local address |
| ff00:: | Multicast address |
| ff00::db7:4322:a231:67c | Multicast address |
| ff02::2 | Multicast address |

# Step 2: Practice compressing and decompressing IPv6 addresses.

Using the rules of IPv6 address abbreviation, either compress or decompress the following addresses:

* 1. 2002:0ec0:0200:0001:0000:04eb:44ce:08a2

2002:0ec0:0200:0001:: 04eb:44ce:08a2

* 1. fe80:0000:0000:0001:0000:60bb:008e:7402

fe80::0001:0000:60bb:008e:7402

* 1. fe80::7042:b3d7:3dec:84b8

fe80:0000:0000:0000:7042:b3d7:3dec:84b8

* 1. ff00::

FF00:0000:0000:0000:0000:0000:0000:0000

* 1. 2001:0030:0001:acad:0000:330e:10c2:32bf

2001:0030:0001:acad::330e:10c2:32bf