00000001	**1**
00000010	**2**
00000100	**4**

00001000	**8**
00010000	**16**
00100000	**32**

01000000	**64**
10000000	**128**
11000000	**192**

11100000	**224**
11110000	**240**
11111000	**248**

11111100	252
11111110	254
11111111	255
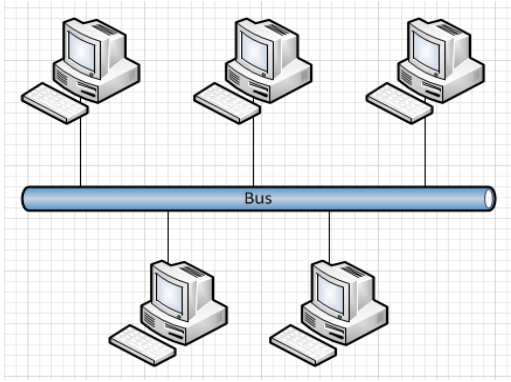
What Type of network is this?	
	BUS Network
What Type of network is this?	
	Ring Network
What Type of network is this?	
	Star Network
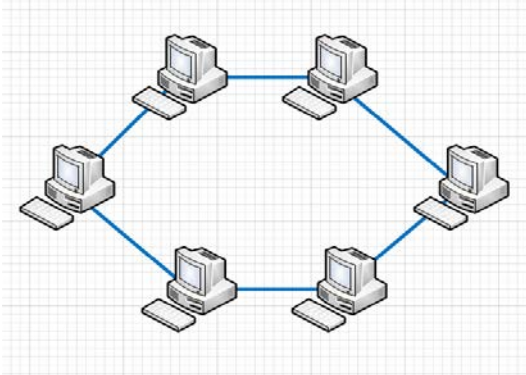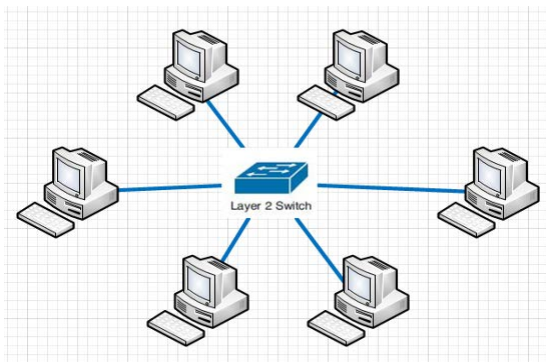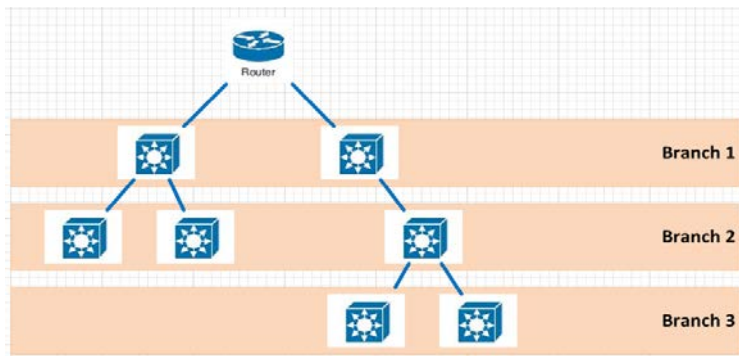
What Type of network is this?	
	Tree Topology
What Type of network is this?	
	Mesh Network
What Type of network is this?	
	Point To Point
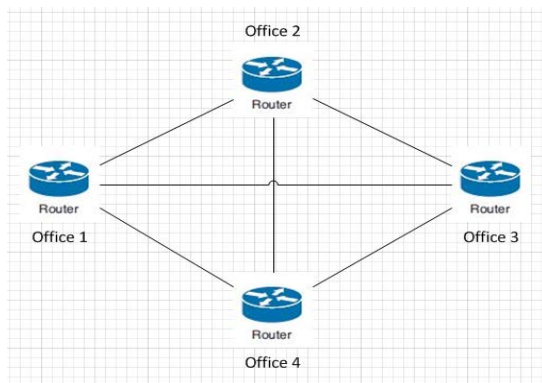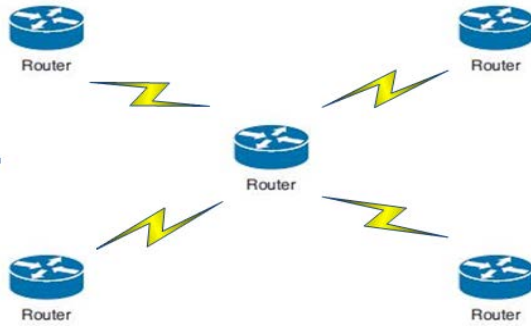
What Type of network is this? Router Router Router Router Router	**Point to Multipoint**
What are the 4 main types of Network Topologies?	**Bus Network, Ring Network, Star Network, Tree Network**

What kind of Ethernet Cable is this?	
	Straight Though Cable
What kind of Ethernet Cable is this?	
	Crossover Cable
What kind of Ethernet Cable is this?	
	Roll Over Cable

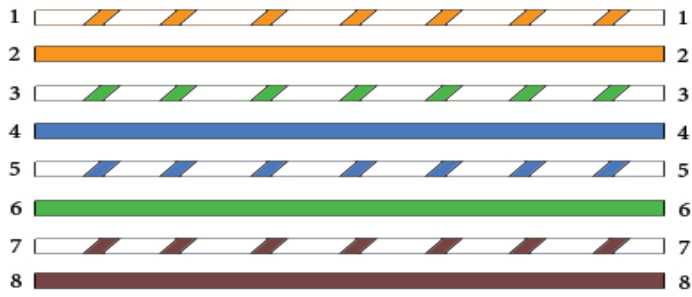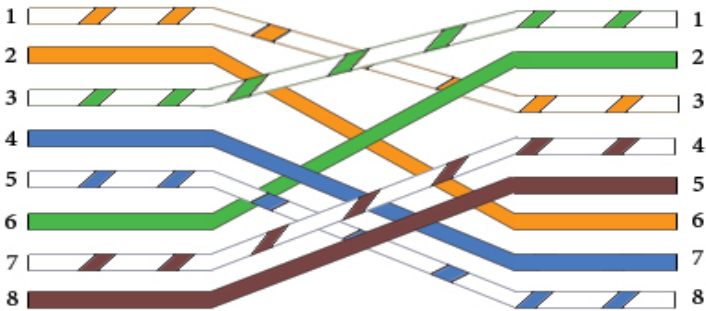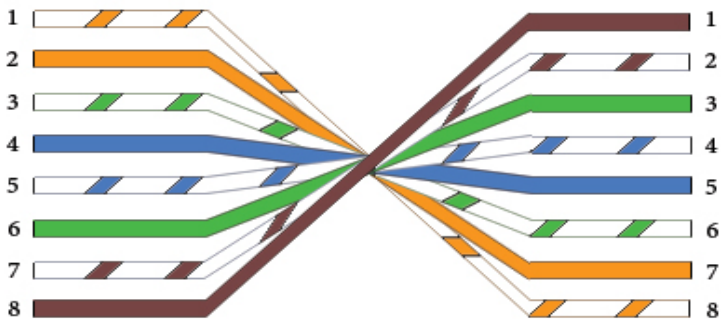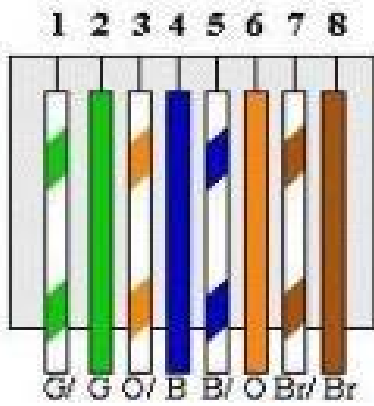|	
What kind of Ethernet Cable is this? 1 2 3 4 5 6 7 8 G/ G O/ B B/ O Br/ Br	**T568A**
What kind of Ethernet Cable is this? 1 2 3 4 5 6 7 8 O/ O G/ B B/ G Br/ Br	**T568B**
What cable would you use to connect a Hub to a Hub?	**Crossover Cable**
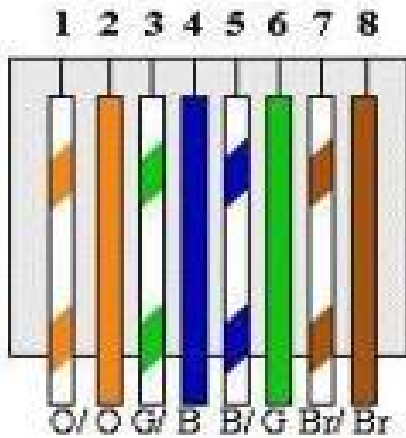
What cable would you use to connect a Hub to a Switch?	**Crossover Cable**
What cable would you use to connect a Hub to a Router?	**Straight Though Cable**
What cable would you use to connect a Hub to a Workstation?	**Straight Though Cable**

What cable would you use to connect a Switch to a Switch?	**Crossover Cable**
What cable would you use to connect a Switch to a Router?	**Straight Though Cable**
What cable would you use to connect a Switch to a Workstation?	**Straight Though Cable**

What cable would you use to connect a Router to a Router?	Crossover Cable
What cable would you use to connect a Router to a Workstation?	Crossover Cable
What cable would you use to connect a Workstation to a Workstation?	Crossover Cable

What is the cable type and max length of 10Base-T?	Copper and 100m
What is the cable type and max length of 100Base-T?	Copper and 100m
What is the cable type and max length of 1000Base-LX?	Fiber 500m

What is the cable type and max length of 1000Base-T?	**Copper and 100m**
What is the cable type and max length of 10GBase-T?	**Copper and 100m**
What Speed is 10Base-T	**10 Mbps**

What Speed is 100Base-T	**10 Mbps**
What Speed is 1000Base-LX	**1000 Mbps**
What Speed is 1000Base-T	**1000 Mbps**

What Speed is 10GBase-T	**10 Gbps**
What is the IEEE standard name for 10BASE-T	**802.3**
What is the IEEE standard name for 100BASE-T	**802.3u**

What is the IEEE standard name for 1000BASE-LX	**802.3z**
What is the IEEE standard name for 1000BASE-T	**802.3ab**
What is the IEEE standard name for 10GBASE-T	**802.3an**

What three devices transmits on Pins 1, 2	PC's, Routers, Wireless AP
What two devices transmits on Pins 3, 6	Hubs and Switches
What is the nick name of 10Base-5	Thicknet

What is the nick name of 10Base-2	**Thinnet**
What is the Max Distance of 10Base-5	**500 m**
What is the Max Distance of 10base-2	**185 m**

Common connectors for 10BASE-T, 100BASE-T, 1000BASE-T	**RJ11, RJ12, RJ45**
Common connectors for 1000BASE-LX or SX	**ST, SC, LC**
Common connectors for 10GBASE-T	**RJ45**

Common connectors for Thinnet 10BASE-5 and Thinnet 10BASE-2	**BNC, N, TNC, UHF**

What Layer of the OSI model is the "Application Layer"	**Layer 7**
What Layer of the OSI model is the "Presentation Layer"	**Layer 6**
What Layer of the OSI model is the "Session Layer"	**Layer 5**

What Layer of the OSI model is the "Transport Layer"	**Layer 4**
What Layer of the OSI model is the "Network Layer"	**Layer 3**
What Layer of the OSI model is the "Data Link Layer"	**Layer 2**

What Layer of the OSI model is the "Physical Layer"	**Layer 1**
What is the layer name for the OSI Layer 7?	**Application Layer**
What is the layer name for the OSI Layer 6?	**Presentation Layer**

What is the layer name for the OSI Layer 5?	Session Layer
What is the layer name for the OSI Layer 4?	Transport Layer
What is the layer name for the OSI Layer 3?	Network Layer

What is the layer name for the OSI Layer 2?	**Data Link Layer**
What is the layer name for the OSI Layer 1?	**Physical Network**
What Layer of the TCP/IP "Updated" model is the "Application Layer"	**Layer 5**

What Layer of the TCP/IP "Updated" model is the "Transport Layer"	**Layer 4**
What Layer of the TCP/IP "Updated" model is the "Network Layer"	**Layer 3**
What Layer of the TCP/IP "Updated" model is the "Data Link Layer"	**Layer 2**

What Layer of the TCP/IP "Updated" model is the "Physical Layer"	**Layer 1**
What is the TCP/IP Layer name of Layer 5?	**Application Layer**
What is the TCP/IP Layer name of Layer 4?	**Transport Layer**

What is the TCP/IP Layer name of Layer 3?	**Network Layer**
What is the TCP/IP Layer name of Layer 2?	**Data Link Layer**
What is the TCP/IP Layer name of Layer 1?	**Physical Layer**

What is the Data Unit at Application Layer?	**Data**
What is the Data Unit at the Presentation Layer?	**Data**
What is the Data Unit at the Session Layer?	**Data**

What is the Data Unit at the Transport Layer?	**Segment**
What is the Data Unit at the Network Layer?	**Packet**
What is the Data Unit at the Data Link Layer?	**Frame**

What is the Data Unit at the Physical Layer?	**Bits**
What port and does it use TCP or UDP: FTP	**20 and 21 TCP**
What port and does it use TCP or UDP: SSH	**22, TCP**

What port and does it use TCP or UDP: Telnet	**23, TCP**
What port and does it use TCP or UDP: SMTP	**25, TCP**
What port and does it use TCP or UDP: DNS	**53, TCP & UDP**

What port and does it use TCP or UDP: DHCP	**67 & 68, UDP**
What port and does it use TCP or UDP: TFTP	**69, UDP**
What port and does it use TCP or UDP: HTTP	**80, TCP**

What port and does it use TCP or UDP: POP3	**110, TCP**
What port and does it use TCP or UDP: SNMP	**161, UDP**
What port and does it use TCP or UDP: HTTPs	**443, TCP**

What is the HDLC Header Equivalent for: Preamble	**FLAG**
What is the HDLC Header Equivalent for: Destination Address	**Address**
What is the HDLC Header Equivalent for: Type	**Type**

What is the HDLC Header Equivalent for: FCS	FCS
What is the "Application Layer" responsible for?	Provides an Interface between the Network and Software Applications for Interpreting requests and requirements.
What is the "Presentation Layer" responsible for?	Allows hosts and applications to use common communication. It also preforms data Encryption, Compression and Formatting.

What is the "Session Layer" responsible for?	**Manages connections (Establish, Maintains, and Terminates)**
What is the "Transport Layer" responsible for?	**Provides End to End communication service for applications. Provides services as Connection-Oriented data stream support, Reliability, Flow Control, and Multiplexing**
What is the "Network Layer" responsible for?	**Creates network connections, translates Network addresses to MAC addresses and sets routing**

What is the "Data Link Layer" responsible for?	**Packages data into frames set by the network**
What is the "Physical Layer" responsible for?	**Physical signal connection between devices, responsible for signaling.**
Common Protocols and Standards for "Application Layer"?	**BOOTP, DHCP, DNS, FTP, HTTP, HTTPS, IMAP4, PING, POP3, NSLOOPUP, NTP, SFTP, SMTP, SNMP, Telnet, TFTP**

Common Protocols and Standards for "Presentation Layer"?	**MIME, SSL, TLS**
Common Protocols and Standards for "Session Layer"?	**RTP and SIP**
Common Protocols and Standards for "Transport Layer"?	**TCP, UDP**

Common Protocols and Standards for "Network Layer"?	**ARP, ICMP, IGMP, IP, IPSec, RARP**
Common Protocols and Standards for "Data Link Layer"?	**L2TP, PPP, PPTP, SLIP**
Common Protocols and Standards for "Physical Link Layer"?	**Ethernet, Token Ring, Wi-Fi**

What network class is this IPv4 IP address and is it Public or Private? **2.5.12.55**	**Class A Public**
What network class is this IPv4 IP address and is it Public or Private? **10.23.140.55**	**Class A Private**
What network class is this IPv4 IP address and is it Public or Private? **126.93.26.112**	**Class A Public**

What network class is this IPv4 IP address and is it Public or Private? 127.0.15.9	**Class A Reserved for Loopback**
What network class is this IPv4 IP address and is it Public or Private? 128.0.5.7	**Class B Public**
What network class is this IPv4 IP address and is it Public or Private? 191.250.168.15	**Class B Public**

What network class is this IPv4 IP address and is it Public or Private? 172.15.68.222	**Class B Public**
What network class is this IPv4 IP address and is it Public or Private? 172.19.57.35	**Class B Private**
What network class is this IPv4 IP address and is it Public or Private? 172.32.183.241	**Class B Public**

What network class is this IPv4 IP address and is it Public or Private? 192.15.39.97	**Class C Public**
What network class is this IPv4 IP address and is it Public or Private? 192.168.7.41	**Class C Private**
What network class is this IPv4 IP address and is it Public or Private? 192.172.0.68	**Class C Public**

What network class is this IPv4 IP address and is it Public or Private? 223.64.134.64	**Class C Public**
What network class is this IPv4 IP address and is it Public or Private? 225.64.68.139	**Class D Multicast (Trick Question)**
What Class network has a defualt Subnet of: 255.0.0.0?	**Class A**

What Class network has a defualt Subnet of: 255.255.0.0?	**Class B**
What Class network has a defualt Subnet of: 255.255.255.0?	**Class C**
What is the CIDR notation of: 255.255.255.0	**/24**

What is the CIDR notation of: **255.255.0.0**	**/16**
What is the CIDR notation of: **255.0.0.0**	**/8**
What is the CIDR notation of: **128.0.0.0**	**/1**

What is the CIDR notation of: **240.0.0.0**	**/4**
What is the CIDR notation of: **255.224.0.0**	**/11**
What is the CIDR notation of: **255.254.0.0**	**/15**

What is the CIDR notation of: **255.255.192.0**	**/18**
What is the CIDR notation of: **255.255.248.0**	**/21**
What is the CIDR notation of: **255.255.255.128**	**/25**

What is the CIDR notation of: 255.255.255.248	**/29**
What is the valid network range of a Class A network	**1.0.0.0 - 126.0.0.0**
What is the valid network range of a Class B network	**128.0.0.0 - 191.255.0.0**

What is the valid network range of a Class B network	192.0.0.0 - 223.255.255.255

How many bits does an IPv4 address have?	**32**
About how many how many IPv4 address are there?	**About 4 Billion**
How many bits does an IPv6 address have?	**128 Bits**

About how many how many IPv6 address are there?	**Over 340 Undecillion**
What IPv? Has IPsec built in?	**IPv6**
What IP version has fragmentation done by the sender and the forwarding routers?	**IPv4**

What IP version has no checksum in the header?	**IPv6**
What IP version has option fields in the header	**IPv4**
What IP version uses ARP?	**IPv4**

What IP version uses NDP?	**IPv6**
What IP version uses IGMP?	**IPv4**
What IP version uses MLD?	**IPv6**

What IP version uses A records?	**IPv4**
What IP version uses AAAA records?	**IPv6**
What IP version uses NAT?	**IPv4**

What IP version has uses the following method for asigning addresses DHCP? "Dynamic Allocation"	**IPv4**
What IP version has uses the following method for asigning addresses DHCP? "Automatic Allocation"	**IPv4**
What IP version has uses the following method for asigning addresses DHCP? "Static Allocation"	**IPv4**

What IP version has uses the following method for asigning addresses DHCP? "Static Configuration"	**IPv6**
What IP version has uses the following method for asigning addresses DHCP? "SLAAC or Stateless Auto Address Configuration"	**IPv6**
What IP version has uses the following method for asigning addresses? "Statefull DHCP"	**IPv6**

What IP version has uses the following method for asigning addresses DHCP? "Stateless DHCP"	**IPv6**

What level route is: Default Route?	**Level 1**
What level route is: Supernet Route?	**Level 1**
What level route is: Network Route	**Level 1**

What level route is: Ultimate Route?	**Level 1**
What level route is: Parent Route?	**Level 1**
What level route is: Child Route?	**Level 2**

What are the 3 ways to access a Cisco network device?	**Console, Telnet, SSH**
Where is the BootStrap stored?	**EEPROM**
Where is the IOS Stored?	**Flash**

Where is the IOS ran from?	**RAM**
Where is the Configuration Stored?	**NVRAM**
Where is the configuration used from?	**RAM**

What protocol is a Distance Vector routing protocol?	**RIP**
What advanced protocol is a Distance Vector routing protocol?	**EGIRP**
What protocol is a Link State routing protocol?	**OSPF**

A bridge operates at Half or Full Duplex?	**Half Duplex**
A switch opperates at what layer of the OSI model?	**Layer 2**
How many colision domains does a Hub have?	**One**

How many colision domains does a Switch have?	Many (As many ports as it has)
What layer of the OSI model dose a Router exist?	Layer 3
What does this below represent in a network diagram?	Bridge

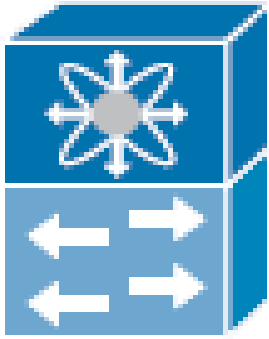|	
What does this below represent in a network diagram?	**Switch (Layer 2)**
What does this below represent in a network diagram?	**Switch (Layer 3)**
What does this below represent in a network diagram?	**Nexus Switch**
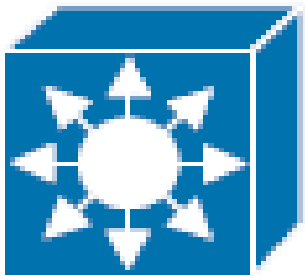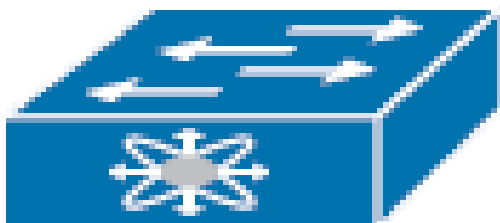
What does this below represent in a network diagram?	**Switch (Nexus 7000)**
What does this below represent in a network diagram?	**Router**
What does this below represent in a network diagram?	**Printer**
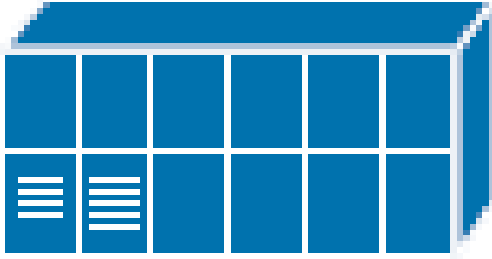
What does this below represent in a network diagram?	**WAN Switch**
What does this below represent in a network diagram?	**Frame Relay Switch**
What does this below represent in a network diagram?	**Cable Modem**

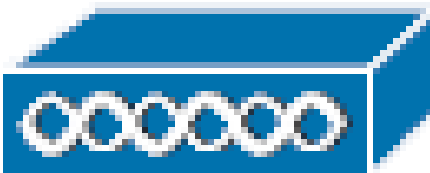|	
What does this below represent in a network diagram?	**DSLAM**
What does this below represent in a network diagram?	**CSU/DSU**
What does this below represent in a network diagram?	**Access Point**
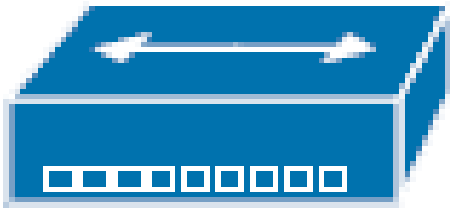
What does this below represent in a network diagram? 	**Hub**
What does this below represent in a network diagram? 	**PIX Firewall**
What does this below represent in a network diagram? 	**Firewall (ASA)**

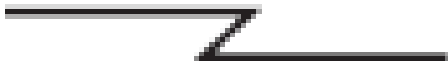|	
What does this below represent in a network diagram? 	**Firewall**
What does this below represent in a network diagram? 	**Network Cloud**
What does this below represent in a network diagram? 	**Network Connection**

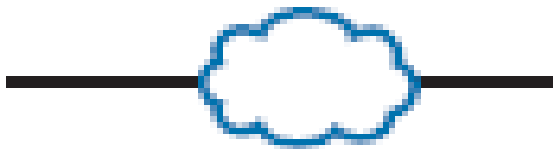| What does this below represent in a network diagram?	Serial Line
What does this below represent in a network diagram?	Virtual Circuit
What does this below represent in a network diagram?	Ethernet WAN

What does this below represent in a network diagram?	**Wireless**
Can a VTP client be used to configure a VLAN?	**No**
VTP <u>Server</u> supports how many VLAN ID's?	**1-1005**

VTP Client supports how many VLAN ID's?	**1-1005**
How many VLAN ID's dose a Transparent Mode support?	**1-4094**
Default Port Cost according to IEEE for: 10 Mbps	**100**

Default Port Cost according to IEEE for: 100 Mbps	**19**
Default Port Cost according to IEEE for: 1 Gbps	**4**
Default Port Cost according to IEEE for: 10 Gbps	**2**

What is the STP default timer value for: Hello	**2 Seconds**
What is the STP default timer value for: Max Age	**10 times the Hello timer**
What is the STP default timer value for: Forward Delay	**15 seconds**

What is the <u>ALL-Nodes</u> Multicast address for IPv6?	**FF02::1**
What is the <u>All-Routers</u> Multicast address for IPv6?	**FF02::2**
What is the <u>RIPng routers</u> Multicast address for IPv6?	**FF02::9**

What is the <u>ALL-OSPF</u> Multicast address for IPv6?	**FF02::5**
What is the <u>ALL-OSPF-DR</u> Multicast address for IPv6?	**FF02::6**
What is the <u>EIGRPv6 routers</u> Multicast address for IPv6?	**FF02::A**