**Outcome 2 Research Task 6 - IP Addressing- Name:**

1. What part of an IPv4 address makes up the network portion?

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| Perform an AND operation on the binary address and subnet mask to find the network number. |

1. Why is it important that the network portion of the IPv4 address is the same for all hosts?

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| Because they are all part of the same subnet, which when communicating with other networks outside, the network number is used to identify the network that the hosts are part of. |

1. From the following table, identify the Network Portion of the following IPv4 and Subnet Mask

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 192 | 168 | 10 | 10 |  |
| 255 | 255 | 255 | 0 |  |
| Answer: 192.168.10.0/24 | | | | |
| 241 | 174 | 233 | 14 |  |
| 255 | 0 | 0 | 0 |  |

Answer: 241.0.0.0/8

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 142 | 162 | 232 | 128 |  |
| 255 | 255 | 0 | 0 |  |
| Answer: 142.162.0.0/16 | | | | |
| 241 | 108 | 221 | 132 |  |
| 255 | 0 | 0 | 0 |  |

Answer: 241.0.0.0/8

1. What address within a range of IPv4 addresses would the Broadcast address always be?

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| Invert the binary network number, perform OR operator on the inverted and non-inverted network address and convert back to dot notation. |

1. Setting a Default Gateways allow what?

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| It allows a device to send information to another device outside the network using a default gateway, unless another is specified. |

1. Identify the Network Address class from the following Subnet Masks

|  |  |
| --- | --- |
| **Subnet Mark** | **Network Address Class** |
| 255.255.0.0 | B |
| 255.255.255.255 | E |
| 255.255.255.0 | C |
| 255.0.0.0 | A |