|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Masks | | | | | Networks | Addresses |
| /1 | /9 | /17 | /25 | 128 | 2 | 128 |
| /2 | /10 | /18 | /26 | 192 | 4 | 64 |
| /3 | /11 | /19 | /27 | 224 | 8 | 32 |
| /4 | /12 | /20 | /28 | 240 | 16 | 16 |
| /5 | /13 | /21 | /29 | 248 | 32 | 8 |
| /6 | /14 | /22 | /30 | 252 | 64 | 4 |
| /7 | /15 | /23 | /31 | 254 | 128 | 2 |
| /8 | /16 | /24 | /32 | 255 | 256 | 1 |

Professor Messer – [Seven Second Subnetting](https://www.youtube.com/watch?v=ZxAwQB8TZsM)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Addresses |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 128 | 0 | 128 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 64 | 0 | 64 | 128 | 192 |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 | 0 | 32 | 64 | 96 | 128 | 160 | 192 | 224 |  |  |  |  |  |  |  |  |
| 16 | 0 | 16 | 32 | 48 | 64 | 80 | 96 | 112 | 128 | 144 | 160 | 176 | 192 | 208 | 244 | 240 |
| 8 | 0 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 | 104 | 112 | 120… |
| 4 | 0 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | 56 | 60… |

Steps

* Convert address and mask to a decimal
* Calculate the network address
  + If the mask is 255, bring down the address
  + If mask is 0, use the 0
  + For any other number, reference the chart
* Calculate the broadcast address
  + If mask is 255, bring down the address
  + If mask is 0, use 255
  + For any other number, reference the chart
* First IP is network address + 1
* Last IP is broadcast address – 1