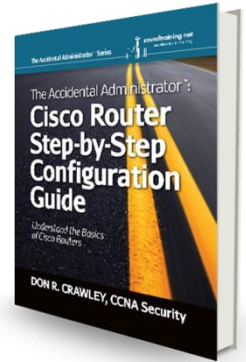


Based on the book *The Accidental Administrator: Cisco Router Step-by-Step Configuration Guide*
(soundtraining.net/bookstore)



Subnetting Worksheet

Step One: Identify the class of address.

- 1-126—Class A (8 bit network ID)
- 128-191—Class B (16 bit network ID)
- 192-223—Class C (24 bit network ID)

Address _____ . _____ . _____ . _____ / _____

Step Two: Write out the number of ones in the subnet mask. Fill in the remaining digits with zeroes.

Step Three: Convert the binary numbers of each octet of the subnet mask to decimal numbers.

Step Four: Draw lines to separate the bits of the major network, the subnet ID, and the host ID

Step Five: Convert the IP address to binary digits (but don't worry about the major network portion of the address).

Step Six: Identify the subnet ID

Step Seven: Identify the broadcast address by turning on all of the host bits, then add that to the subnet ID

Step Eight: Count the number of bits in the major network ID, the subnet ID, and the host ID. The total must equal 32.

Step Nine: Identify the number of available subnets by taking 2 to the power of the number of subnet bits minus 2.

Step Ten: Identify the number of hosts per subnet by taking 2 to the power of the number of host bit minus 2.

Class of address? _____

IP Address (Decimal)		•		•		•	
Subnet Mask (Decimal)		•		•		•	

	1 2 8	6 4	3 2	1 6	8	4	2	1		1 2 8	6 4	3 2	1 6	8	4	2	1		1 2 8	6 4	3 2	1 6	8	4	2	1	
IP Address (Binary)								•										•									
Subnet Mask (Binary)								•										•									
Broadcast Address (Binary)								•										•									

Number of major network bits? _____ Number of subnet bits? _____ Number of host bits? _____ (Total=32)

Number of available subnets? (2ⁿ-2) _____ Number of hosts per subnet? (2ⁿ-2) _____