RouterTeacherMan's Simplified Subnetting Formula

1. **Select an ip address & network prefix, from the file RouterTeacherMan's Subnetting Practice Problems.pdf.**
   - Example: 38.124.218.222/29
   - x.x.x.x/x

2. **Next, using the network prefix found in the CIDR notation column on the left side of RouterTeacherMan's Subnetting Chart, determine the block size from the Far-Right column of the chart.**
   - Example: Block Size = 8
   - Block Size = x

3. **Next, determine the octet you are working in, by looking in the CIDR notation column on the left side of the chart, i.e., 1st Octet, 2nd Octet, 3rd Octet, 4th Octet. Underline the octet value in the ip address.**
   - Example: 38.124.218.222/29
   - x.x.x.x/x

4. **Next, divide the underlined octet value from Step 3, by the block size.**
   Note: You will not be allowed to use a calculator when you take the actual exam.
   - Example: 222/8 = 27.75 Disregard any remainder, rounding off to 27
   - Octet Value/Block Size = x.xx Disregard any remainder, rounding off to x

5. **Multiply the rounded off value obtained from Step 4, by the block size, obtained from Step 2.**
   Note: You will not be allowed to use a calculator when you take the actual exam.
   - Example: 27 x 8 = 216
   - Value x Block Size = x

6. **Take the calculated value from Step 5, and place it in the underlined octet position you selected in Step 3. Everything to the right of that underlined octet position becomes zero(es), or the value(s) defined by the network prefix you are using for the formula.**
   - Example: Network Address: 38.124.218.216/29
   - Example: The first available host ip address can be found by adding 1, for 38.124.218.217/29.

   - Network Address: x.x.x.x/x
   - The first available host ip address, can be found by adding 1, for x.x.x.x/x.

7. **Add the value obtained from Step 5, to the block size obtained from Step 2, and subtract 1. Place the value in the underlined octet position you selected in Step 3.**
   - Example: 216 + 8 = 224 - 1 = 223
   - Broadcast Address: 38.124.218.223/29
   - The last available host ip address, can be found by subtracting 1, for 38.124.218.222/29.

   - Value + Block Size = x - 1 = x
   - Broadcast Address: x.x.x.x/x
   - The last available host ip address, can be found by subtracting 1, for x.x.x.x/x.

You can check your work by using this online CIDR/VLSM Calculator.
Just enter the IP Address, and set the Mask Bits to the network prefix you used in the formula.

http://www.subnet-calculator.com/cidr.php