Name _____ **Active Learning – (25 Points)**

For this active learning module, you will:

1. Create a Microsoft Word document and solve the following problem:

   Given 198.73.29.85 and you need 26 subnets:

   Find:

   a) The number of usable hosts per subnet

   b) The subnet mask

   c) The usable host address ranges for all subnets

2. Next, Create a Microsoft Visio diagram using the information from above and the logical diagramming symbols provided to you and create a network topology adhering to the following specifications:

    a) Your company has five locations:

    - ✓ Two employees have offices at the Austin location
    - ✓ Two employees have offices at the Denver location
    - ✓ Two employees have offices at the Santa Cruz location
    - ✓ Two employees have offices at the Milwaukee location
    - ✓ Two employees have offices at the New York, location

    b) Each location has a printer on the network, each having its own ip address.

    c) The Austin location is connected to the Denver location and the Milwaukee location via WAN connections.

    d) The Milwaukee location is connected to the Santa Cruz location via a WAN connection.

    e) The New York location is connected to the Milwaukee location and the Santa Cruz location via WAN connections.

    f) Each WAN connection is a dedicated point-to-point T1 (find the bandwidth of this connection and label each connection on the diagram).

    g) Each location has a dedicated switch and a dedicated router.

    h) All LAN connections are FastEthernet connections.

    i) Label each and every link as to the speed of the connection (ie: 10Mbps…).

    j) Label each device on the network (you may use whatever naming scheme you would like for the router(s), switch(es), printer(s), and pc(s)).

    k) Using a textbox, write down the network address, broadcast address, subnet mask and usable host address range for each subnet along with the subnet mask being used in dotted decimal notation.

    l) Make sure all of your interfaces are labeled with their IP Address and subnet mask (in bit notation).

    Please NOTE: Make sure you draw the topology utilizing the logical network symbols provided to you within the "generic visio stencils" in ilearn. You may download Microsoft Visio through your Microsoft Imagine account online.

3. Upload the following files to this assignment within iLearn:
    a) your .doc or .docx file (for the math associated with question #1)
    b) your .vsd or .vsdx file (for your design)

Good Luck with your active learning module!