

**CS 372**                      **Introduction to Computer Networks**  
**Self-Check Exercises: Lecture 32**

- 1) What is the motivation for Network Address Translation (NAT)
  
  
  
  
  
  
  
  
  
  
- 2) What are some advantages NAT?
  
  
  
  
  
  
  
  
  
  
- 3) What are some disadvantages of NAT?
  
  
  
  
  
  
  
  
  
  
- 4) Why does NAT have to translate port numbers?
  
  
  
  
  
  
  
  
  
  
- 5) The computers in your network have addresses of the form 10.0.0.x/8, and your network uses a NAPT device as an internet gateway. The NAPT box has external address 192.205.11.1, and internal address 10.0.0.1 . The next available port number on the NAPT device is 36409. Suppose that the original sender at computer 10.0.0.25 uses port 23000 to send a query to a remote host at 209.53.77.5 on port 80.

When the message from the original sender arrives at the NAPT device...

- What is the source address:port? \_\_\_\_\_
- What is the destination address:port? \_\_\_\_\_

When the message is forwarded from the NAPT device to the remote host...

- What is the source address:port? \_\_\_\_\_
- What is the destination address:port? \_\_\_\_\_

When a response from the remote host comes back to the NAT device...

- What is the source address:port? \_\_\_\_\_
- What is the destination address:port? \_\_\_\_\_

When the NAT device relays the message to the original sender...

- What is the source address:port? \_\_\_\_\_
- What is the destination address:port? \_\_\_\_\_

- 6) What does a NAT device change in an outgoing TCP/IP datagram?
- 7) What does a NAT device change in an incoming TCP/IP datagram?
- 8) What are some methods by which an outside host can contact a server running behind a NAT device?