



5. The following program fragment is copied, with some minor modification, from your textbook. Please explain briefly first what this fragment does, and then explain in detail the meaning of each numbered line. (15 pts.)

```
char *
sock_ntop(const struct sockaddr *sa, socklen_t salen)
{
    char portstr[8];
    static char str[128]; /* Unix domain is largest */

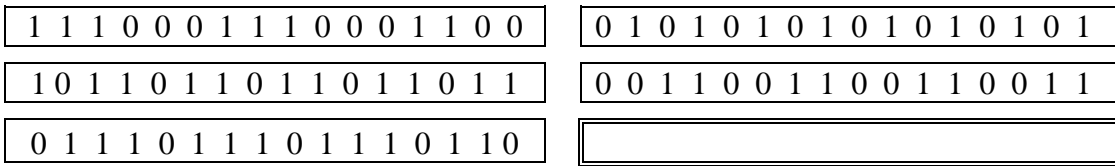
10  switch (sa->sa_family) {
11  case AF_INET: {
12      struct sockaddr_in *sin = (struct sockaddr_in *) sa;

13      if (inet_ntop(AF_INET, &sin->sin_addr, str, sizeof(str)) == NULL)
14          return(NULL);
15      if (ntohs(sin->sin_port) != 0) {
16          snprintf(portstr, sizeof(portstr), ":%d", ntohs(sin->sin_port));

18          strcat(str, portstr);
        }
20  return(str);
    }
}
```

6. What value will a *big endian* client get in return if it sends the two short integer values, 0x3C4D and 0x1A2B, to a *little endian* server and have them added there? Show work. (15 pts.)

7. Compute the checksum for the following simplified TCP segment. Show work. (15 pts.)



checksum

