

Problem 15. (8 points):

Consider the source code below, where M and N are constants declared with #define.

```
int mat1[M][N];
int mat2[N][M];

int copy_element(int i, int j)
{
    mat1[i][j] = mat2[j][i];
}
```

This generates the following assembly code:

```
copy_element:
    pushl %ebp
    movl %esp,%ebp
    pushl %ebx
    movl 8(%ebp),%ecx
    movl 12(%ebp),%ebx
    movl %ecx,%edx
    leal (%ebx,%ebx,8),%eax
    sall $4,%edx
    sall $2,%eax
    subl %ecx,%edx
    movl mat2(%eax,%ecx,4),%eax
    sall $2,%edx
    movl %eax,mat1(%edx,%ebx,4)
    movl -4(%ebp),%ebx
    movl %ebp,%esp
    popl %ebp
    ret
```

A. What is the value of M:

B. What is the value of N: