QUIZ!
Use a full sheet of 8½x11" paper. (Half sheet? Half credit!)

Put **only your last name** in the **far upper left hand corner** of the sheet, where a staple would hit it. It's OK to write **BIG**, just start in the corner!

**Mitchell**  
**AVOID A ½-POINT DEDUCTION!**

Keep answers short! Avoid full sentences. Feel free to abbreviate.

Four questions; 3 minutes; 4 points + ½ point E.C.
1. \texttt{qsort(3)} can be used to sort values of any type, even instances of structures. How does \texttt{qsort} achieve such great flexibility?

2. Here's a prototype: \texttt{int f(char *)};
Write a declaration for a function pointer \texttt{fp} such that \texttt{fp = f} is valid.

3. Write a declaration for an \texttt{int} array named \texttt{vals} that has three rows and two columns.

4. Given \texttt{vals} from #3, what is \texttt{sizeof(vals[0])}?

EC \( \frac{1}{2} \) point:
Is \texttt{sizeof(vals[0])} \(\equiv\) \texttt{sizeof(vals[0,0])}? Why or why not?
Solutions

1. `qsort(3)` can be used to sort values of any type, even instances of structures. How does `qsort` achieve such great flexibility?
   The caller supplies a pointer to a function that does comparisons. (`qsort` knows all about sorting but nothing about comparison.)

2. Here's a prototype: `int f(char *);`
   Write a declaration for a function pointer `fp` such that `fp = f` is valid. `int (*fp)(char *);`

3. Write a declaration for an `int` array named `vals` that has three rows and two columns. `int vals[3][2];`

4. Given `vals` from #3, what is `sizeof(vals[0])`? 8 (two ints)

EC ½ point:
   Is `sizeof(vals[0]) == sizeof(vals[0,0])`? Why or why not? They are equal. `0,0` is a likely misuse of the comma operator, and produces the value zero.