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 paper, where a staple would hit it. (It helps when sorting quizzes!)

Avoid a ½-point deduction!

Numbering responses may help you avoid overlooking a question; it's ok to go ahead and pre-number your sheet.

Feel free to abbreviate, like otw for otherwise.

odd :: Integer -> Bool returns true iff its argument is odd

"iff" means "if and only if"

3 minutes; 1 + ½ + ½ + 0 + 0 points; 2 pts total
1. Write \texttt{sum list}, which returns the sum of the numbers in \texttt{list}.

2. Write \texttt{co list}, which returns a count of the odd numbers in \texttt{list}.

3. Observe the following and answer this: What's the type of \texttt{isLetter}?

   \begin{verbatim}
   > :type isLetter
   isLetter :: Char -> Bool
   \end{verbatim}

   Questions 4 and 5 (below) are worth zero points! (I'm just curious.)

4. Write \texttt{mem x list}, which returns \texttt{True} iff \texttt{x} is in \texttt{list}.

5. Write \texttt{last list}, which returns the last element of \texttt{list}. Return \texttt{undef} for the empty list.
Solutions

\[
\text{sum } [] = 0 \\
\text{sum } (x:xs) = x + \text{sum } xs
\]

\[
\text{co } [] = 0 \\
\text{co } (x:xs) \\
| \text{odd } x = 1 + \text{co } xs \\
| \text{otherwise } = \text{co } xs
\]

The type of \text{isLetter} is \textbf{Char -> Bool}

\[
\text{mem } _ [] = \text{False} \\
\text{mem } e (x:xs) \\
| e == x = \text{True} \\
| \text{otherwise } = e \ `\text{mem}` \ xs
\]

last [] = undefined \\
last [x] = x \\
last (_:xs) = \text{last } xs