In-Class Worksheet

Discrete Math & Functional Programming— CSCI 054— Spring 2024

Instructor: Osborn

```
-- numList n returns a list of integers from n downto 1
numList n =
    if n <= 0
    then []
    else n : (numList (n-1))
```

Write a function `oddList` where `oddList n` evaluates to a list of odd integers from `n` down to `1`. If `n` is less than 1 then the function should return an empty list.

Write a function `oddList'` where `oddList' n` evaluates to a list of odd integers from `1` up to, but possibly not including `n`. If `n` is less than 1 then the function should return an empty list. Do not use the `reverse` function.

What do the following list comprehensions evaluate to?

1. `[ if x*y > 3 then [1] else [2] | x <- [1..3], y <- [1..3] ]`

2. `[ (x,y,z) | x <- [1..3], y <- [1..3], z <- [1..3], x < y, y < z ]`

3. `[ (x,y,z) | z <- [1..3], y <- [1..3], x <- [1..3], x < y, y < z ]`