Programming in Haskell
Assignments Set 1. 1.2, 1.3, 1.5, 2.1, 2.3, 2.4, 2.5

1.2

```
>       sum [x]
>       x + sum [ ]
>       x + 0
>       x
```

1.3

Define a function product that produces the product of a list of umbers and show using your def. that product [2,3,4] = 24

```
>       product [ ] = 1
>       product (x:xs) = x * product xs
```

product [2,3,4]
2 * (product [3,4])
2 * (3 * product [4])
2 * (3 * product [ ])
= 24

1.5

The effect of < instead of <= in sort

qsort [2,2,3,1,1]
qsort [1,1] ++ [2] ++ qsort [3]

qsort subtracts identical terms.

2.1

(2 uparrow 3) * 4
(2 * 3) + (4 * 5)
2 + (3 * (4 uparrow 5))

2.3

```
N = a 'div' length xs
        where
                a = 10
              xs = [1,2,3,4,5]
```

should be

```
n = a 'div' length xs
        where
        a = 10
        xs = [1,2,3,4,5]
```

2.4

```
>       last xs = head (reverse xs)
>       last xs = xs !! (length xs - 1)
```

2.5

```
>       init xs = take (length xs - 1) xs
>       init xs = reverse (tail (reverse xs))
```