

Math 240, Quiz 6

Name:

Circle One: T 12:05 T 2:25 R 12:05 R 2:25

Instructions: Answer all questions fully, showing work where necessary.

1) Let $f(n)$ be the sum of the first n squares (i.e. $f(n) = \sum_{i=1}^n n^2$). Give a recursive definition of f .

Let $f(1) = 1$, and for $n > 1$, let $f(n) = f(n - 1) + n^2$.

2) Give a recursive algorithm for finding the maximum of a finite set of integers.

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input:  $a_1, \dots, a_n$ 
  if  $n = 1$  then  $m = a_1$ 
  else  $m = \max(a_1, \dots, a_{n-1})$ 
  if  $a_n > m$  then  $m := a_n$ 
output  $m$ 
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