NUMBER THEORY: CLASS 4

1. Exercise

1) Solve the following linear diophantine equation,

$17x + 13y = 15$.

2) Determine whether the following function is $O(n)$:

a) $2n + 7$
b) $\frac{n^2}{3}$
c) 10
d) $log(n^2 + 1)$
e) $\sqrt{n^2 + 1}$
f) $\frac{n^2+1}{n+1}$

3) Show that $n!$ is $O(n^n)$.

4) Add, subtract multiply and divide $(1001)_2$ from $(110010)_2$.

Date: Tuesday, September 9, 2008.