**Math 201** Quiz I **---** Double Sample **--- Part II & More** (from part I) *N. Nahlus*

**5)** Let  . Find  (via the Maclaurin series of *f(x)*.

**5\*)** Let 

(i) Find the Taylor series of f(x) at a=2 with its domain of convergence. (Hint: x=2+(x-2))

(ii) Find

**6) 10.10** (p. 603) **:** 15, 17, 20,22 Estimate the definite integrals (in such problems) by using the first two non-zero terms of the relevant series

**6\*)** **10.10** (p. 603) : 25, 59, 55, 5

**7)** Find value of the following



**8)** Find  (**Hint** : Use  if this last exists)

Algebra step 1: = **8\*)** Find 

**9)** Suppose ****. Moreover, 

(a) Find the Maclaurin series of *f* (x).

(b) Show that = its Maclaurin series

(c) Find the exact value of  (Look carefully at its series)

(d)If we approximate *f*(x) ~ P10 (where P10 is the Maclaurin polynomial of *f* (x)),

estimate the error in such approximation on the interval 0 < x < 2.

**10)** p. 583: 39, 40, 42 (more problems on “Find interval of convergence”)

**11)** Find & deduce 

**12)** p. 608: 20, 27 (more problems LCT problems)