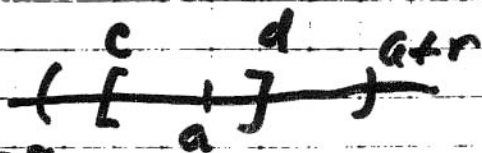


(2)  $f(x)$  is integrable in any interval  $[c, d]$  contained in  $(a-r, a+r)$  and



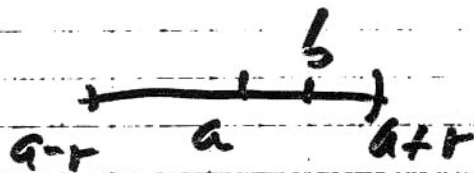
$$\int f(x) dx = \int \sum_{n=0}^{\infty} C_n (x-a)^n dx$$

$$= \sum_{n=0}^{\infty} C_n \int (x-a)^n dx$$

$$\int (x-a)^n dx = \frac{(x-a)^{n+1}}{n+1}$$

$$= \sum_{n=0}^{\infty} \frac{C_n}{n+1} (x-a)^{n+1} + K \text{ Constant of integration.}$$

Also,  $\int_a^b f(x) dx = \int_a^b \sum_{n=0}^{\infty} C_n (x-a)^n dx$



$$= \sum_{n=0}^{\infty} \frac{C_n}{n+1} (b-a)^{n+1}$$

for any  $b$  in  $(a-r, a+r)$ .