CSC 2262

1/26/2010

Taylor’s approximations

Errors

Given a function f(x) whose n derivative is known at x = a

Pn(x) = f(a) + (x-a)f’(a) + [(x-a)^2]/2! f’’(a)

Errors in Taylor Approximations

Given a function f(x)

The error in Taylor Approximation is given by

Rn(x) = f(x) – Pn(x) = [(x-a)^(n+1)]/(n+1)! \* f^(n+1)

Rn(x) = [(x-a)^(n+1)]/ (n+1)!