PRACTICAL NO: 7(B)

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Name :

Roll No:

Aim : Curve Fitting by Principle of least Square Method for Fitting of Second degree curve

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Curve Fitting by Principle of least Square Method for Fitting of **Second degree curve**

function [**e**]=curvefit2(**x**, **y**, **x0**)

[ry,cy]=size(**y**)

n=cy;

sx1=0;sx2=0;sx3=0;sx4=0;sxy1=0;sxy2=0;sxy3=0;

for k=1:n

sx1=sx1+**x**(k);

sx2=sx2+**x**(k)^2;

sx3=sx3+**x**(k)^3;

sx4=sx4+**x**(k)^4;

sxy1=sxy1+**y**(k);

sxy2=sxy2+**x**(k)\***y**(k);

sxy3=sxy3+**x**(k)^2\***y**(k);

end

A=[n,sx1,sx2;sx1,sx2,sx3;sx2,sx3,sx4];

B=[sxy1,sxy2,sxy3]';

C=inv(A)\*B;

printf('The second degree curve is y=%g+%g\*x+%g\*x^2\n',C(1),C(2),C(3));

**e**=[1,**x0**,**x0**^2]\*C;

printf('The estimate is %g\n',**e**);

return(**e**);

endfunction

**output:-**

-->x=[1,2,3,4,5,6];

-->y=[2,4,3,6,8,9];

-->curvefit2(x,y,2)

The second degree curve is y=1.5+0.553571\*x+0.125\*x^2

The estimate is 3.10714

ans =

3.1071429