
```

function [localmat] = ffun(xy_pts, triag_no)

%
% This function computes, the values for ffun
% at the requested xy_pts points in triangle triag_no.
% The vector of values is returned in localmat.
%
%

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Global Variables %%%%%%%%%
global nodeco elnode bdynde bdyedge nVert nedge
global GlobalV GlobalP GlobalS GlobalG
global dimTvel dimTpre dimTstr dimTGrv
global vel_bas_type pre_bas_type str_bas_type Grv_bas_type
global quad_rul num

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%%%
npts = size(xy_pts,1) ;
x = xy_pts(:,1)';
y = xy_pts(:,2)';

```

localmat is a vector of values

```

%'num' is used to change between the two problems in the homework
if num == 1
    localmat = 2*pi*x.*y+10;
else
    localmat = 2*(x.*sin(2*pi*x.*y)+x)+3*(sin(2*pi*x.*y)
+2*pi*x.*y.*cos(2*pi*x.*y)+1)+4*pi^2*x.*y.^2.*sin(2*pi*x.*y)+ ...
                4*pi^2*x.^3.*sin(2*pi*x.*y)-4*pi*y.*cos(2*pi*x.*y)
+4*pi*x.^2.*cos(2*pi*x.*y);
end

```

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