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function [CQuadVal, GradCQuadVal] = CtsQuad(quad_pts)
%
% This function computes the values of the continuous
% quadratic basis functions, and of its gradient, at
% the quadrature points quad_pts --- on the reference triangle.
%

nqpt = size(quad_pts,1) ;

x=quad_pts(:,1)';
y=quad_pts(:,2)';

CQuadVal(1,:) = 2*(1 - x - y).*(1/2 - x - y) ;
CQuadVal(2,:) = 2*x.*(x - 1/2) ;
CQuadVal(3,:) = 2*y.*(y - 1/2) ;
CQuadVal(4,:) = 4*x.*y ;
CQuadVal(5,:) = 4*(1 - x - y).*y ;
CQuadVal(6,:) = 4*(1 - x - y).*x ;

GradCQuadVal(1,1,:) = -2*(1.0 - x - y)-2*(1/2 - x - y);
GradCQuadVal(2,1,:) = 2*x+2*(x-1/2) ;
GradCQuadVal(3,1,:) = zeros(1,nqpt) ;
GradCQuadVal(4,1,:) = 4*y ;
GradCQuadVal(5,1,:) = -4*y ;
GradCQuadVal(6,1,:) = 4*(1-x-y)-4*x ;

GradCQuadVal(1,2,:) = -2*(1.0 - x - y)-2*(1/2 - x - y);
GradCQuadVal(2,2,:) = zeros(1,nqpt) ;
GradCQuadVal(3,2,:) = 2*y+2*(y-1/2) ;
GradCQuadVal(4,2,:) = 4*x ;
GradCQuadVal(5,2,:) = 4*(1-x-y)-4*y ;
GradCQuadVal(6,2,:) = -4*x ;
```

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