# To test if the given point lies inside the triangle

Status: Completed

x1 = Triangle(1,1); y1 = Triangle(1,2);x2 = Triangle(2,1); y2 = Triangle(2,2);

x3 = Triangle(3,1); y3 = Triangle(3,2);

del = 0.5\* abs((x1\*(y2-y3))+ (x2\*(y3-y1)) + (x3\*(y1-y2)));

sz = Points;

if sz(2) ==1

x = Points(1); y = Points(2);

del1 = 0.5\* abs((x1\*(y-y3))+ (x\*(y3-y1)) + (x3\*(y1-y)));

del2 = 0.5\* abs((x1\*(y2-y))+ (x2\*(y-y1)) + (x\*(y1-y2)));

del3 = 0.5\* abs((x\*(y2-y3))+ (x2\*(y3-y)) + (x3\*(y-y2)));

sum = del1+del2+del3;

if sum == del

y = 1;

else

y=0;

end

else

x\_1 = Points(1,1) ; y\_1 = Points(1,2); x\_2 = Points(2,1) ; y\_2 = Points(2,2);

del\_1 = 0.5\* abs((x1\*(y\_1-y3))+ (x\_1\*(y3-y1)) + (x3\*(y1-y\_1)));

del\_2 = 0.5\* abs((x1\*(y2-y\_1))+ (x2\*(y\_1-y1)) + (x\_1\*(y1-y2)));

del\_3 = 0.5\* abs((x\_1\*(y2-y3))+ (x2\*(y3-y\_1)) + (x3\*(y\_1-y2)));

sum\_1 = del\_1+del\_2+del\_3;

y\_1 = zeros(1,2);

if sum\_1 == del

y\_1(1) = 1;

else

y\_1(1)=0;

end

del\_\_1 = 0.5\* abs((x1\*(y\_2-y3))+ (x\_2\*(y3-y1)) + (x3\*(y1-y\_2)));

del\_\_2 = 0.5\* abs((x1\*(y2-y\_2))+ (x2\*(y\_2-y1)) + (x\_2\*(y1-y2)));

del\_\_3 = 0.5\* abs((x\_2\*(y2-y3))+ (x2\*(y3-y\_2)) + (x3\*(y\_2-y2)));

sum\_\_1 = del\_\_1+del\_\_2+del\_\_3;

if sum\_\_1 == del

y\_1(2) = 1;

else

y\_1(2)=0;

end

y = y\_1;

end