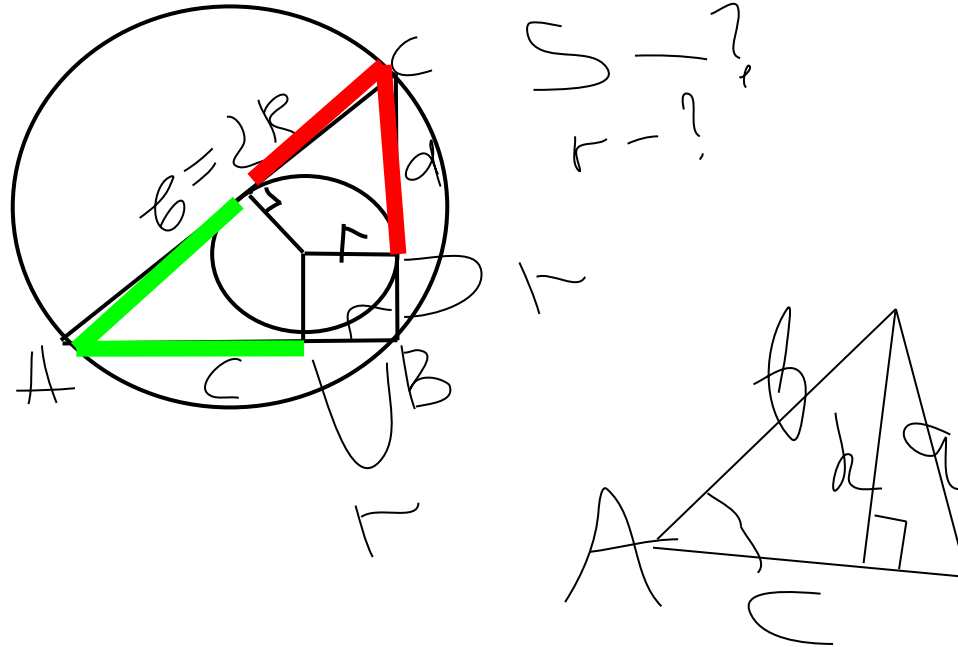Радиусы описанной и вписанной окружности прямоугольного треугольника относятся как 5:2.
Один из катетов равен "a". Найти площадь треугольника и радиус вписанной окружности.

зел=2R-красн=2R- (a-r)

c=зел+r=2R- (a-r)+r=2R-a+2r
напишем т пиф
(2R)^2=a^2 + (2R-a+2r)^2
(10x)^2=a^2 + (10x-a+4x)^2
100x^2=a^2 + (14x-a)^2
100x^2=a^2 + 196x^2-28ax+a^2
100x^2-a^2-196x^2+28ax-a^2=0
-96x^2+28ax-2a^2=0
14ax-a^2-48x^2=0
48x^2-14ax+a^2=0
D/4=49a^2-48a^2=a^2
x1=(7a+a)/2=4a
x2=(7a-a)/2=3a

(2R)^2=a^2 + (2R-a+2r)^2
4R^2=a^2+(2R-a+2r)^2
R=5r/2
4(5r/2)^2=a^2+(2(5r/2)-a+2r)^2
25r^2=a^2+(5r-a+2r)^2
25r^2=a^2+(7r-a)^2
25r^2=a^2+49r^2-14ra+a^2
12r^2-7ar+a^2=0
D=49a^2-48a^2=a^2
r1=(7a+a)/24   r2=(7a-a)/24
r1=a/3   r2=a/4

R/r=5/2
S=sinA*AC*AB/2
S=sinA*b*c/2
sinA=h/b
h=sinA*b
S=hc/2
S=sinA*b*c/2
a/sinA=b/sinB=c/sinC=2R
sinA=a/2R
S=abc/(4R)
S=r(a+b+c)/2
b=2R
c=V(4R^2-a^2)
S=a*V(4R^2-a^2)/2=r(a+2R+V(4R^2-a^2))/2

S=2x(a+10x+V(100x^2-a^2))/2
2x(a+10x+V(100x^2-a^2))/2=a*V(100x^2-a^2)/2
2xa+20x^2+2x*V(100x^2-a^2)-a*V(100x^2-a^2)=0
2xa+20x^2+(2x-a)V(100x^2-a^2)=0
2xa+20x^2=(a-2x)V(100x^2-a^2) |^2
(2xa+20x^2)^2=(a-2x)^2(100x^2-a^2)
4x^2a^2+80x^3a+400x^4=(a^2-4xa+4x^2)*
*(100x^2-a^2)
4x^2a^2+80x^3a+400x^4=100x^2a^2-400x^3a+
+400x^4-a^4+4xa^3-4a^2x^2
4x^2a^2+80x^3a-100x^2a^2+400x^3a+a^4-4xa^3+
+4a^2x^2=0
480ax^3-92a^2x^2-4xa^3+a^4=0 |:a
480x^3-92ax^2-4a^2x+a^3=0

R1=5a/6
R2=5a/8
S1=a*V(4R^2-a^2)/2=
=a*V(4(5a/6)^2-a^2)/2=
=a*V(100a^2/36)-a^2)/2=
=a*V(100a^2/36-a^2)/2=
=a*V(64a^2/36)/2=8a^2/12=
=2a^2⅔
S2=a*V(4(5a/8)^2-a^2)/2=
=a*V(100a^2/64)-a^2)/2=
=a*V(100a^2-64a^2)/64)/2==
a*V(36a^2)/64)/2=
=6a^2/16=3a^2/8