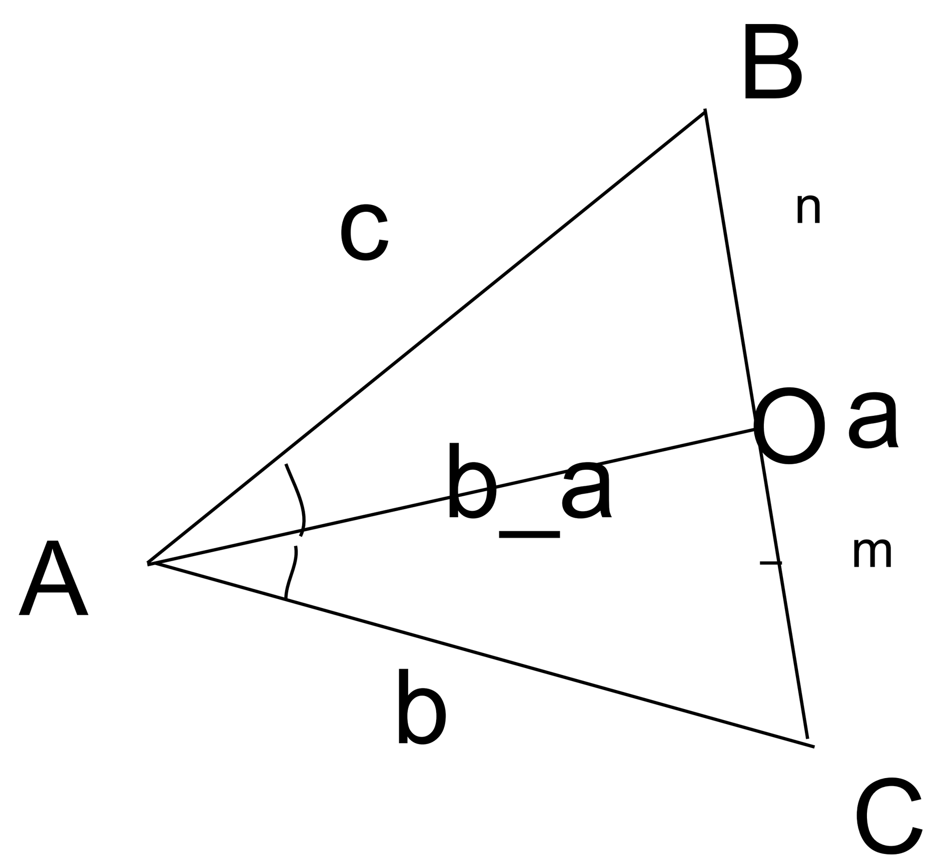
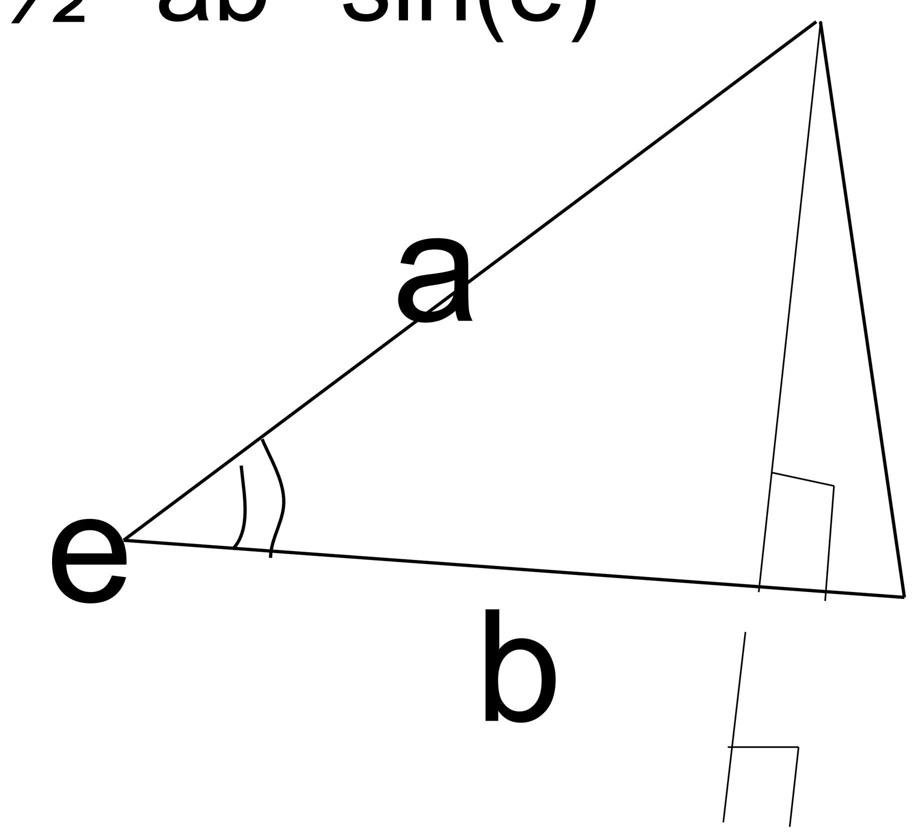
Дан треугольник ABC, и три его стороны a,b,c. найти b_a



S=½* ab *sin(e)



S=½*ab*sin(e)   Док-во:
S=½*b*h
sine=h/a
h=sine*a
S=½*b*sine*a
S=½*ab*sin(e)

Решение задачи
S(AOB)=½*c*b_a*sin(BAO)
S(AOC)=½*b*b_a*sin(CAO)
S1(ABC)=(b*sin(CAO)+c*sin(BAO))*½*b_a
S2(ABC)=½*c*b*sin(A)
½*c*b*sin(A)=(b*sin(A/2)+c*sin(A/2))*½*b_a
c*b*sin(A)=(b*sin(A/2)+c*sin(A/2))*b_a
c*b*sin(A)=(b+c)*b_a*sin(A/2)
c*b*2*sin(A/2)*cos(A/2)=(b+c)*b_a*sin(A/2)
2*c*b*cos(A/2)=(b+c)*b_a
(2*c*b*cos(A/2))/(b+c)=b_a
cosB=(a^2+c^2-b^2)/2ac
cosA=(b^2+c^2-a^2)/2bc
cos2x=2cos^2 x-1
cosA=2cos^2(A/2)-1
cos^2(A/2)=(cosA+1)/2
cos(A/2)=V[(cosA+1)/2]=V[((b^2+c^2-a^2)/2bc+1)/2
cos(A/2)=V[(b^2+c^2-a^2+2bc)/4bc]=V[((b+c)^2-a^2)/4bc]=V[(b+c-a+a-a)(b+c+a)/4bc]=V[(((b+c+a)/2-a)*(b+c+a)/2)/bc
(a+b+c)/2=p
cos(A/2)=V[(p-a)*p/bc]
b_a=(2*c*b*cos(A/2))/(b+c)
b_a=(2*b*c*V[(p-a)*p/bc])/(b+c)
b_a=(2*V[(p-a)*p*bc])/(b+c)