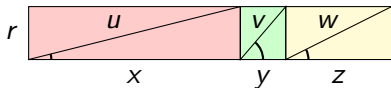$Area(\Delta ABC) = K$
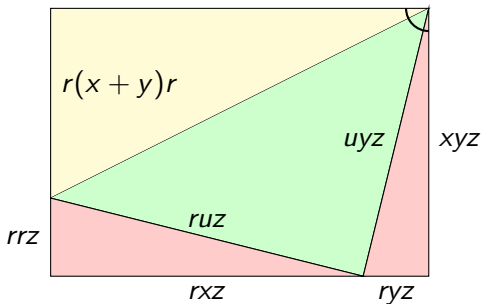
$s = x + y + z$

$s - a = x, s - b = y, s - c = z$

$K = r(x + y + z) = rs$

$r^2(x + y + z) = xyz$

$K^2 = r^2 s^2 = sxyz$

$K = \sqrt{s(s - a)(s - b)(s - c)}$