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Ehrhart's polynomial for equilateral triangles in \$\mathbb Z^3\$

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In this paper we calculate the Ehrhart's polynomial associated with a 2dimensional regular polytope (i.e. equilateral triangles) in $\mbox{mathbb Z^3}$. The polynomial takes a relatively simple form in terms of the coordinates of the vertices of the polytope and it depends heavily on the value \$d\$ and its divisors, where \$d=\sqrt{\frac{a^2+b^2+c^2}{3}}\$ and \$(a,b,c)\$ (\$\gcd(a,b,c) =1\$) is a vector with integer coordinates normal to the plane containing the triangle.

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