Question # 10714

If $a+b+c=6$,then find the value of$(2-a)^3+(2-b)^3+(2-c)^3-3(2-a)(2-b)(2-c)$.

Solution. Using identity $x^3+y^3+z^3-3xyz=(x+y+z)(x^2+y^2+z^2-xy-yz-xz)$, one can get that $(2-a)^3+(2-b)^3+(2-c)^3-3(2-a)(2-b)(2-c)=(6-a-b-c)(\ldots)=0$.

Answer 0.