Factor $a^3+b^2+c^2$ over a^2+b+c no line between them, no signs of operation.

Explanation

Factoring is the opposite process of multiplying polynomials, in order to return to a unique string of polynomials of lesser degree whose product is the original polynomial, is the simplest way to solve equations of higher degree. When we factor a polynomial, we are looking for simpler polynomials that can be multiplied together to give us the polynomial that we started with. If all of the terms in a polynomial contain one or more identical factors, combine those similar factors into one monomial, called the greatest common factor, and rewrite the polynomial in factored form.

In our case, $a^3+b^2+c^2$ we can divide on a^2+b+c

$$\begin{array}{l|l} a^3+b^2+c^2 & a^2+b+c \\ \hline -\ a^3+ab+ac & a+b+c \\ \hline -ab-ac+b^2 & \\ -\ a^2b+bc+b^2 & \\ \hline -ab-ac-a^2b-bc+c^2 & \\ -\ a^2c+bc+c^2 & \\ \hline -ab-ac-a^2b-bc-a^2c-bc & \end{array}$$

Thus we can write, $(a^2+b+c)\ (a+b+c)+(-ab-ac-a^2b-2bc-a^2c)=$

$=(a^2+b+c)\ (a+b+c)+(-a^2b-a^2c-2bc-ab-ac)$

Answer: $(a^2+b+c)\ (a+b+c)+(-a^2b-a^2c-2bc-ab-ac)$

Check:

$(a^2+b+c)\ (a+b+c)+(-ab-ac-a^2b-bc-a^2c-bc)=(a^3+a^2b+a^2c+ab+$

$+b^2+bc+ac+bc+c^2-ab-ac-a^2b-bc-a^2c-bc)=(a^3++b^2+c^2)$

If we consider the second polynomial a^2+b+c, we can provide a solution in the following way - can be expressed as the sum of the squares:

$$a^2+b+c=\left(a+\left(\sqrt{b+c}\right)\right)\left(a+\left(\sqrt{b+c}\right)\right)-2a\sqrt{b+c}$$

Also we can check:

$\left(a+\left(\sqrt{b+c}\right)\right)\left(a+\left(\sqrt{b+c}\right)\right)-2a\sqrt{b+c}=(a^2+a\sqrt{b+c}+\ a\sqrt{b+c}+\sqrt{b+c}\times$
$\sqrt{b+c}-2a\sqrt{b+c})=(a^2+2a\sqrt{b+c}+b+c-2a\sqrt{b+c})=\ (a^2+b+c)$

Answer:

$$a^2 + b + c = \left(a + \left(\sqrt{b + c}\right)\right)\left(a + \left(\sqrt{b + c}\right)\right) - 2a\sqrt{b + c}$$