$$\frac{a^3+b^3+c^3}{abc} = 3 \quad \rightarrow \quad a^3+b^3+c^3 = 3abc$$ (Ans) (2 lines)

$$\frac{a^2}{bc}+\frac{b^2}{ca}+\frac{c^2}{ab} = \frac{a^2\cdot a+b^2\cdot b+c^2\cdot c}{abc} = 3 \quad \rightarrow \text{Using}$$

$$\frac{a^3+b^3+c^3}{abc} = 3 \quad \text{(Ans)}$$

$$\text{LHS} \quad \frac{3abc}{abc} = 3$$

$$(a+b+c)^3$$
$$= (a+b+c)(a^2+b^2...)$$

8. If a, b, c are all non-zero and $a+b+c=0$, prove that
$$\frac{a^2}{bc}+\frac{b^2}{ca}+\frac{c^2}{ab}=3$$

$$\frac{a^3+b^3}{a+b} \quad abc$$

$$\rightarrow a+b+c = 0$$

$$\boxed{\begin{array}{l} a = -(b+c) \\ a+b = -c \end{array}} \quad ①$$
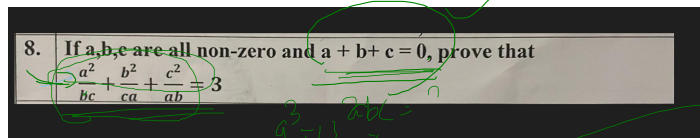
$$\rightarrow (a+b)^3 = (-c)^3$$

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

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

$$a^3+b^3+c^3 = 3abc \quad ①$$

$$(a+b+c)^2$$
$$= a^2+b^2+c^2$$
$$\quad + 2ab + 2bc$$
$$\quad + 2ca$$

$$\rightarrow \text{Now } 1$$