1. $a^3+b^3+c^3=(6K_1)^3+(6K_2)^3+(6K_3)^3=6(36K_1^3+36K_2^3+36K_3^3)$

2. $a^3+b^3+c^3=(6K_1)^3+(6K_2+1)^3+(6K_3+5)^3=216K_1^3+216K_2^3+108K_2^2+18K_2+1$
$+216K_3^3+540K_3^2+750K_3+125$

$=6(36K_1^3+36K_2^3+36K_3^3+18K_2^2+3K_2+90K_3^2+125K_3+21)$

3. $a^3+b^3+c^3=(6K_1)^3+(6K_2+2)^3+(6K_3+4)^3=216K_1^3+216K_2^3+216K_2^2+72K_2+8$
$+216K_3^3+12\times36K_3^2+48\times6K_3+64$

$=6(36K_1^3+36K_2^3+36K_2^2+12K_2+36K_3^3+72K_3^2+48K_3+12)$

4. $a^3+b^3+c^3=(6K_1)^3+(6K_2+3)^3+(6K_3+3)^3=216K_1^3+216K_2^3+3\cdot36K_2^2\cdot3$
$+3\cdot6K_2\cdot9+27+216K_3^3+3\cdot36K_3^2\cdot3+3\cdot6K_3\cdot9+27$
$=6(36K_1^3+36K_2^3+54K_2^2+27K_2+36K_3^3+54K_3^2+27K_3+9)$

5. $a^3+b^3+c^3=(6K_1+1)^3+(6K_2+1)^3+(6K_3+4)^3=216K_1^3+108K_1^2+18K_1+1$
$+216K_2^3+108K_2^2+18K_2+1+216K_3^3+12\cdot36K_3^2+48\cdot6K_3+64$
$=6(36K_1^3+18K_1^2+3K_1+36K_2^3+18K_2^2+3K_2+36K_3^3+72K_3^2+48K_3+11)$

6. $a^3+b^3+c^3=(6K_1+1)^3+(6K_2+2)^3+(6K_3+3)^3=216K_1^3+108K_1^2+18K_1+1$
$+216K_2^3+216K_2^2+72K_2+8+216K_3^3+9\cdot36K_3^2+18\cdot9K_3+9$
$=6(36K_1^3+18K_1^2+3K_1+36K_2^3+36K_2^2+12K_2+36K_3^3+54K_3^2+27K_3+3)$

7. $a^3+b^3+c^3=(6K_1+2)^3+(6K_2+2)^3+(6K_3+2)^3=6(36K_1^3+36K_1^2+12K_1$
$+36K_2^3+36K_2^2+12K_2+36K_3^3+36K_3^2$
$+12K_2+4)$

$\boxed{\text{Prob 27:}}$ The sum of the squares of three natural numbers is divisible by 9. Prove that we can choose two of these no.s such that their difference is div by 9. (Wrong questn)

- By division algorithm, $\forall x\in\mathbb{N}$, $x=3p$ or $x=3p+1$ or $x=3p+2$ for some $p\in\mathbb{N}$
- Let, $a,b,c\in\mathbb{N}$. $a=3p, 3p+1$ or $3p+2$; $b=3q, 3q+1, 3q+2$, $c=3r, 3r+1, 3r+2$. for some $p,q,r\in\mathbb{Z}$