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## POLYNOMIALS

### ASSIGNMENT NO. 2

1. Factorise:  $16x^3 - 2y^3$
2. If  $x + y + 1 = 0$ , prove that  $x^3 + y^3 + 1 = 3xy$ .
3. Simplify:  $(p + q + r)^2 + (p - q - r)^2$
4. If  $x + 2y = 10$ ,  $xy = 15$ , find  $x^3 + 8y^3$
5. Factorise:  $(x^2 - 4x)(x^2 - 4x - 1) - 20$
6.  $R_1$  and  $R_2$  are the remainders obtained when  $x^3 + 2x^2 - 5kx - 7$  and  $x^3 + kx^2 - 12x + 6$  are divided by  $x + 1$  and  $x - 2$  respectively and if  $2R_1 + R_2 = 6$ , then find the value of  $k$ .
7. Factorise:  $(a^2 - 2a)^2 - 23(a^2 - 2a) + 120$
8. Using factor theorem, factorise:  $x^3 - 2x^2 - 5x + 6$