

Subject – Maths.

Class- 9

Topic – Ch. 2 Polynomials

Refer to Video #11 and solve the following exercise:

Prectice Exercise 2.4

1. Factorise :

(i) $12x^2 - 7x + 1$

(ii) $2x^2 + 7x + 3$

(iii) $6x^2 + 5x - 6$

(iv) $3x^2 - x - 4$

2. Factorise :

(i) $x^3 - 2x^2 - x + 2$

(ii) $x^3 - 3x^2 - 9x - 5$

(iii) $x^3 + 13x^2 + 32x + 20$

(iv) $2y^3 + y^2 - 2y - 1$

3. Factorise the following quadratic polynomials by splitting the middle term :

(i) $x^2 - 18x + 77$

(ii) $x^2 - 25x + 144$

(iii) $1 - x - 72x^2$

(iv) $x^2 - 22x - 48$

(v) $40 + 3x - x^2$

(vi) $x^2 - 5x - 24$

4. Factorise the following quadratic polynomials by splitting the middle term :

(i) $x^2 + 3\sqrt{3}x + 6$

(ii) $x^2 - \sqrt{2}x - 12$

(iii) $x^2 + 11\sqrt{5}x + 50$

(iv) $3\sqrt{2}x^2 + 11x + 4\sqrt{2}$

(v) $2\sqrt{3}x^2 + 7x - 5\sqrt{3}$

(vi) $5x^2 + 4\sqrt{5}x + 3$

(vii) $2x^2 - 4\sqrt{2}x - 5$

(viii) $2x^2 + 2\sqrt{14}x + 7$

5. Factorize the following quadratic polynomials by splitting the middle term :

(i) $\frac{1}{3}x^2 + 5x + 12$

(ii) $2x^2 + \frac{x}{6} - \frac{1}{12}$

(iii) $15x^2 - 2x + \frac{1}{15}$

(iv) $x^2 + \frac{16}{63}x + \frac{1}{63}$

(v) $4x^2 - 20xy + 25y^2$

(vi) $8\left(4x - \frac{1}{4x}\right)^2 + 10\left(4x - \frac{1}{4x}\right) + 3$

(vii) $5\left(3x + \frac{1}{x}\right)^2 - 8\left(3x + \frac{1}{x}\right) - 4$

6. Factorise the following quadratic polynomials by using factor theorem :

(i) $x^2 + 4x - 21$

(ii) $4x^2 + 8x + 3$

(iii) $x^2 + 9x - 36$

(iv) $3x^2 - 12x + 9$

7. Factorise the following polynomials :

(i) $x^3 - 8x^2 + x + 42$

(ii) $x^3 + 13x^2 + 31x - 45$

(iii) $x^3 + 6x^2 + 11x + 6$

(iv) $12x^3 + 4x^2 - 3x - 1$

(v) $x^4 + x^3 - 7x^2 - x + 6$

(vi) $x^4 - 4x^3 - x^2 + 16x - 12$

8. If $(x + 2)$ is a factor of the polynomial $p(x) = kx^3 + x^2 - 12x - 4$, then find the value of k and hence factorise the polynomial $p(x)$.

9. Using the factor theorem factorise the polynomial $f(x) = x^4 - 14x^3 + 31x^2 - 154x + 120$

10. Using factor theorem factorise the polynomial $g(x) = x^4 + 11x^3 + 41x^2 + 61x + 30$

