

POLYNOMIALS

Q1. Factorise $6x^2 + 17x + 5$ by splitting the middle term.

$$[Ans: (3x+1)(2x+5)]$$

© www.studiestoday.com. Must NOT be copied or reproduced in any form or by any means.

Q2. Factorise

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

(b) $7x^4 - 98x^2 + 343$

(c) $-1 - 2xy + x^2 + y^2$

(d) $12xy - 4x^2 + 1 - 9y^2$

(e) $(a+b)^3 - a - b$

$$[Ans: (a) (2x+5y)^2; (c) [(x-y+1)(x-y-1)] \\ (b) [7(x^2-7)^2]; (d) [(1+2x-3y)(1-2x+3y)] \\ (e) [(a+b)(a+b+1)(a+b-1)]]$$

Q3. Factorise $x^2 - x - 6$ by Using factor theorem

$$[Ans: (x-3)(x+2)]$$

Q4. Factorise $x^3 - 23x^2 + 142x - 120$

$$[Ans: (x-1)(x-10)(x-12)]$$

Q5. Factorise $x^3 - 10x^2 - 53x - 42$

$$[Ans: (x+1)(x+3)(x-14)]$$

Q6. Factorise $x^3 - 6x^2 + 3x + 10$ given that $(x+1)$ is a factor

$$[Ans: (x+1)(x-2)(x-5)]$$

Q7 Factorise (a) $(x+1)^2 - (y-1)^2$

$$(b) 16x^4 - 81y^4$$

$$[Ans: (a) [(x+y)(x-y+2)]$$

$$(b) [(2x+3y)(2x-3y)(4x^2+9y^2)]$$

Q8. Factorise: $(a+b)^2 - 14c(a+b) + 49c^2$

$$[Ans: (a+b-7c)^2]$$

Q9. Factorise: $(x^2 + \frac{1}{x^2}) - 4(x + \frac{1}{x}) + 6$

$$[Ans: (x + \frac{1}{x} - 2)^2]$$

Q10. Factorise: $2x^2 + 2\sqrt{6}xy + 3y^2$

$$[Ans: (\sqrt{2}x + \sqrt{3}y)^2]$$