

2.3

- 1) $3a^2 - 3b^2 = 3(a^2 - b^2) = 3(a + b)(a - b)$
- 2) $5x^2 - 5 = 5(x^2 - 1) = 5(x + 1)(x - 1)$
- 3) $xy^2 - xz^2 = x(y^2 - z^2) = x(y + z)(y - z)$
- 4) $a^3 - ab^2 = a(a^2 - b^2) = a(a + b)(a - b)$
- 5) $3a^2b^2 - 12b^2 = 3b^2(a^2 - 4) = 3b^2(a + 2)(a - 2)$
- 6) $a^2 - a^4 = a^2(1 - a^2) = a^2(1 + a)(1 - a)$
- 7) $5x^2 - 10x + 5 = 5(x^2 - 2x + 1) = 5(x - 1)^2$
- 8) $-a^2 + 2ab - b^2 = -(a^2 - 2ab + b^2) = -(a - b)^2$
- 9) $x^4 + 2x^3 + x^2 = x^2(x^2 + 2x + 1) = x^2(x + 1)^2$
- 10) $4a^3b + 9ab^3 - 12a^2b^2 = 4a^3b - 12a^2b^2 + 9ab^3 = ab(4a^2 - 12ab + 9b^2) = ab(2a - 3b)^2$
- 11) $9a^3 - a = a(9a^2 - 1) = a(3a + 1)(3a - 1)$
- 12) $4x^5y - 9xy^3 = xy(4x^4 - 9y^2) = xy(2x^2 + 3y)(2x^2 - 3y)$
- 13) $2a - 8a^3 + 8a^5 = 2a(1 - 4a^2 + 4a^4) = 2a(1 - 2a^2)^2$
- 14) $48a - 16a^2 - 36 = -16a^2 + 48a - 36 = -4(4a^2 - 12a + 9) = -4(2a - 3)^2$
- 15) $x^6 + 16x^4 - 8x^5 = x^6 - 8x^5 + 16x^4 = x^4(x^2 - 8x + 16) = x^4(x - 4)^2$