

Factorization: Homework

1. Factorize the following:

(a) $x^2 - 6x + 9$.

(b) $3x^2 + 24x + 48$.

(c) $7x^2 - 63$.

(d) $x^4 - 32x^2 + 256$.

2. Factorize the following:

(a) $x^3 - 27$.

(b) $2x^3 + 16$.

(c) $x^6 - 64$.

(d) $x^9 - 2x^6 + x^3$.

3. Factorize the following:

(a) $x^2 - 7x + 8$

(b) $x^2 + 9x + 20$.

(c) $7x^2 + 14x - 21$.

(d) $3x^2 - 7x + 2$.

(e) $6x^2 + 8x + 2$.

4. Factorize the following:

(a) $x^3 - 3x^2 + 3x - 1$

(b) $x^3 - 6x^2 + 11x - 6$.

(c) $2x^3 + x^2 - 2x - 1$.

5. Factorize the following:

(a) $x^2 - a^2 + 1 - 2x$

(b) $x^4 + x^2y^2 + y^4$.

(c) $(1 - 2x - x^2)(1 - 2x + 3x^2) + 4x^4$.

(d) $a^2 + b^2 + c^2 - 2ab - 2bc - 2ca$.

(e) $abc - (a + b + c)(ab + bc + ca)$.

6. Factorize the following:

(a) $x^{12} - 3x^8 + 3x^4 - 1$.

(b) $x^9 + 9x^8 + 36x^7 + 84x^6 + 126x^5 + 126x^4 + 84x^3 + 36x^2 + 9x + 1$.