

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

## 功課：因式分解

### 1. 因式分解：

- (a)  $x^2 - 6x + 9$ .
- (b)  $3x^2 + 24x + 48$ .
- (c)  $7x^2 - 63$ .
- (d)  $x^4 - 32x^2 + 256$ .

### 2. 因式分解：

- (a)  $x^3 - 27$ .
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### 3. 因式分解：

- (a)  $x^2 - 7x + 8$
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- (d)  $3x^2 - 7x + 2$ .
- (e)  $6x^2 + 8x + 2$ .

### 4. 因式分解：

- (a)  $x^3 - 3x^2 + 3x - 1$
- (b)  $x^3 - 6x^2 + 11x - 6$ .
- (c)  $2x^3 + x^2 - 2x - 1$ .

### 5. 因式分解：

- (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. 因式分解：

- (a)  $x^{12} - 3x^8 + 3x^4 - 1$ .
- (b)  $x^9 + 9x^8 + 36x^7 + 84x^6 + 126x^5 + 126x^4 + 84x^3 + 36x^2 + 9x + 1$ .