1. Factorize each of the following using **common factors**:

    (i) $x^2 + xy$ (ii) $-yx - zx$

    (iii) $x(x-4) + y(x-4)$ (iv) $4nm + 20m$

    (iv) $xyz - 4xy - 2xz$

2. Factorize each of the following by **grouping**:

    (i) $x(x+2) + 3(x+2)$ (ii) $m(2m-1) - (2m-1)$

    (iii) $ma + mb - 3a - 3b$ (iv) $xy + y^2 - x - y$

    (v) $x^2 - 2x - 5x + 10$

3. Factorize the following **perfect square**

    (i) $x^2 + 10x + 25$ (ii) $x^2 - 14x + 49$

    (iii) $x^2 - 8x + 16$ (iv) $x^2 + 6x + 36$

4. Factorize the following using **difference of two squares**:

    (i) $x^2 - 4$ (ii) $1 - x^2$

    (iii) $100 - y^2$ (iv) $4x^2 - 1$

5. Simplify the following algebraic expressions:

    (i) $2x - 3y - (5x + 7y)$

    (ii) $4a - 3(2 - a)$

    (iii) $\dfrac{16m^2}{4m}$

    (iv) $\dfrac{(x+2)(x+1)}{(x+1)}$

    (v) $\dfrac{x^2 - 36}{x - 6}$