$$(3x + 2)(4x - 6) = 3x(4x) + 2(4x) - 3x(6) - 2(6)$$

$$= 12x^{2} + 8x - 18x - 12 = 12x^{2} - 10x - 12$$

## 6.Simplify: x^2 + 2x + 1

This is a quadratic expression in the form of  $(x+a)^2+b$  where a=-1, b=1

## 7.Simplify: 3x^2 - 2x + 1

This is a quadratic expression in the form of  $(x+a)^2+b$  where a=-1, b=1

8.Simplify: (2x + 3)(x - 4)

To simplify this expression, we use the distributive property.

10.Simplify: 2x^3 + 4x^2 - 6x

To simplify this expression, we add like terms.

2x^3, 4x^2, and -6x are all multiples of x, so we can add them together.

 $2x^3 + 4x^2 - 6x = 2x^3 + 4x^2 - 6x = 2x^3 + 4x^2 - 6x$ 

11.Solve: 2x + 3 = 7

To solve this equation, we want to find the value of x that makes the equation true.

First, we subtract 3 from both sides: 2x = 4