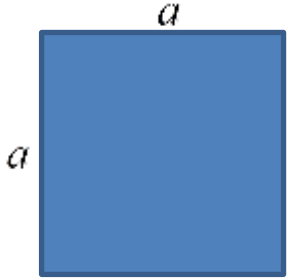
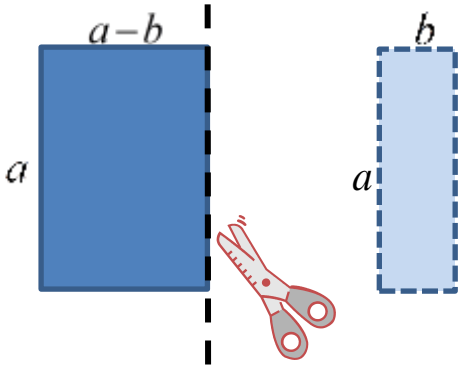
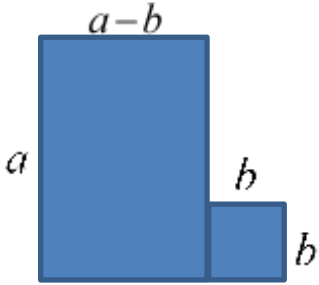
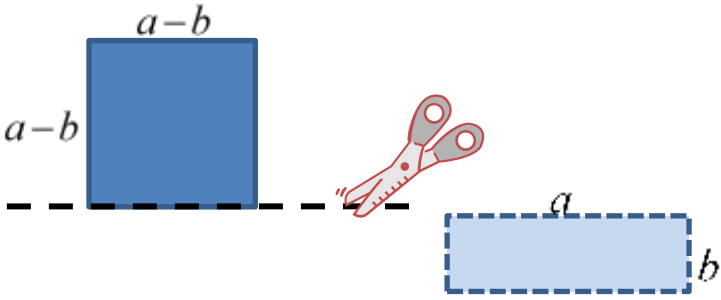
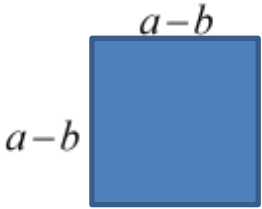


主題二 利用乘法公式  $a^2 - 2ab + b^2 = (a-b)^2$  作因式分解

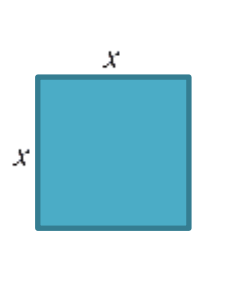
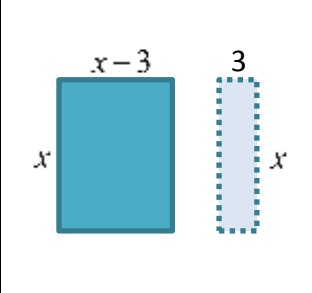
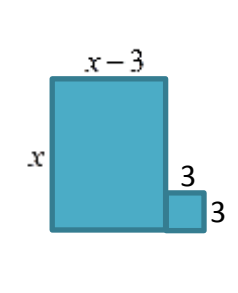
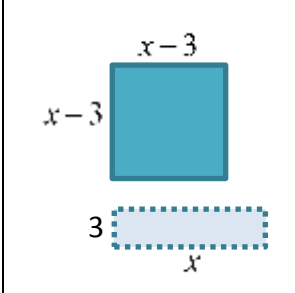
	$a^2$
	$a^2 - ab$
	$a^2 - ab + b^2$
	$a^2 - ab + b^2 - ab$
	$\begin{aligned} a^2 - ab + b^2 - ab \\ = a^2 - 2ab + b^2 \\ = (a-b)^2 \end{aligned}$

**【Part One】**

1. 例：

(1) 因式分解  $x^2 - 6x + 9$

$$\begin{aligned}
 \text{解：} & x^2 - 6x + 9 \\
 & = x^2 - 2 \cdot x \cdot 3 + 3^2 \quad \leftarrow a^2 - 2 \cdot a \cdot b + b^2 \\
 & = (x - 3)(x - 3) \\
 & = (x - 3)^2 \quad \leftarrow (a - b)^2
 \end{aligned}$$

			
$x^2$	$x^2 - 3x$	$x^2 - 3x + 3^2$	$x^2 - 3x + 3^2 - 3x$ $= (x - 3)^2$

(2) 因式分解  $x^2 - 10x + 25$

$$\begin{aligned}
 \text{解：} & x^2 - 10x + 25 \\
 & = x^2 - 2 \cdot x \cdot 5 + 5^2 \quad \leftarrow a^2 - 2 \cdot a \cdot b + b^2 \\
 & = (x - 5)^2 \quad \leftarrow (a - b)^2
 \end{aligned}$$

2. 練習題：

因式分解下列各式子

(1)  $x^2 - 8x + 16 =$

(2)  $x^2 - 4x + 4 =$

(3)  $x^2 - 14x + 49 =$

**【Part Two】**

1. 例：

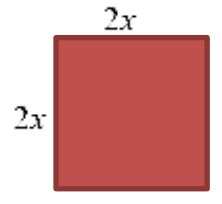
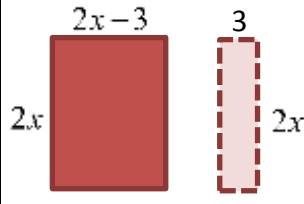
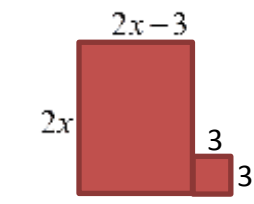
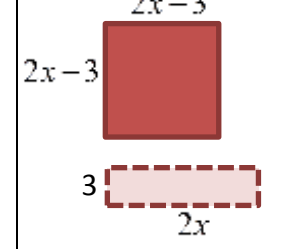
(1) 因式分解  $4x^2 - 12x + 9$

解：  $4x^2 - 12x + 9$   
 $= (2x)^2 - 2 \cdot 2x \cdot 3 + 3^2$   
 $= (2x - 3)(2x - 3)$   
 $= (2x - 3)^2$

$$a^2 - 2 \cdot a \cdot b + b^2$$

$$\parallel \parallel$$

$$(a - b)^2$$

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

(2) 因式分解  $16x^2 - 8x + 1$

解：  $16x^2 - 8x + 1$   
 $= (4x)^2 - 2 \cdot 4x \cdot 1 + 1^2$   
 $= (4x - 1)^2$

$$a^2 - 2 \cdot a \cdot b + b^2$$

$$\parallel \parallel$$

$$(a - b)^2$$

2. 練習題：

因式分解下列各式子。

(1)  $25x^2 - 10x + 1 =$

(2)  $81x^2 - 18x + 1 =$

(3)  $9x^2 - 30x + 25 =$