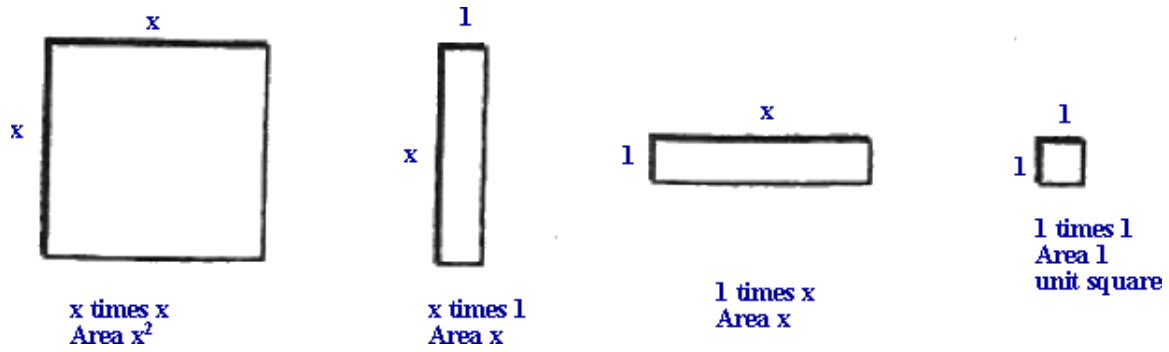


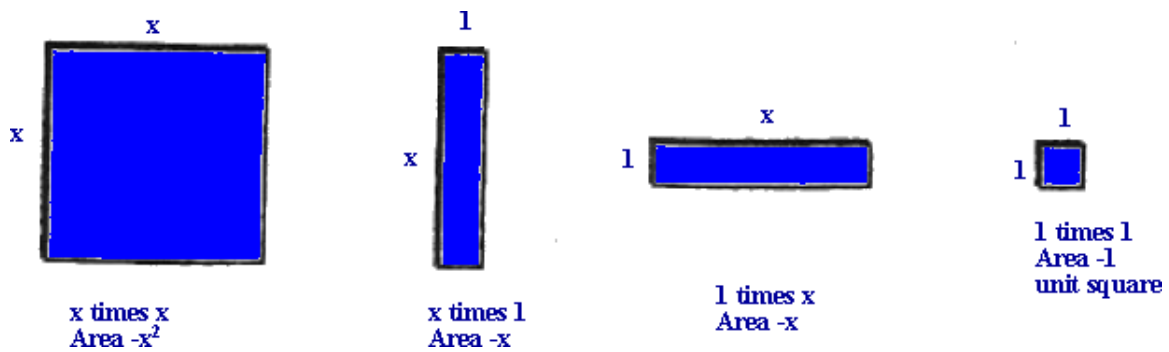
Topic: Expansion and Factorisation Worksheet 1

Using algebraic tiles to demonstrate expansion/multiplication of algebra

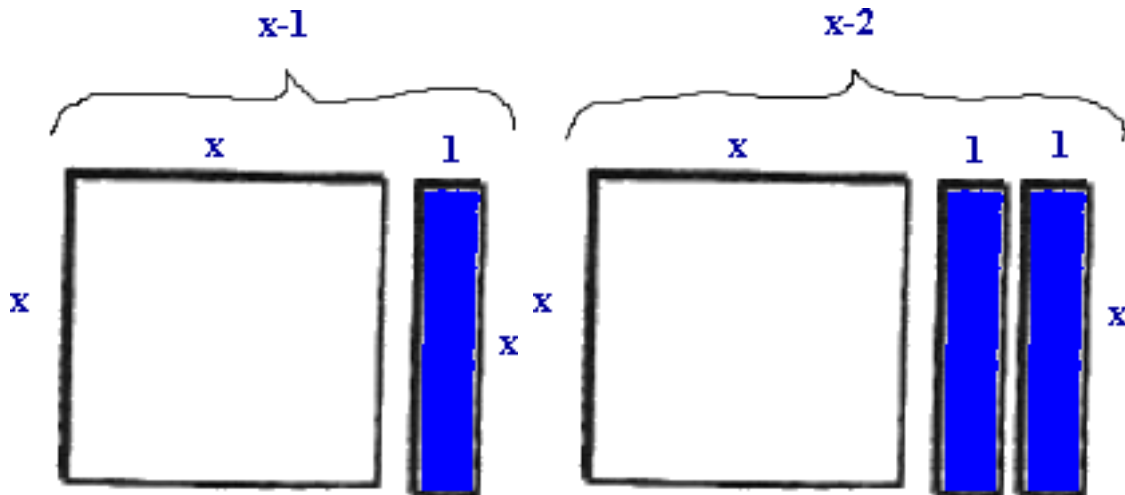
White tiles represents positive areas:



Shaded tiles represents negative areas:

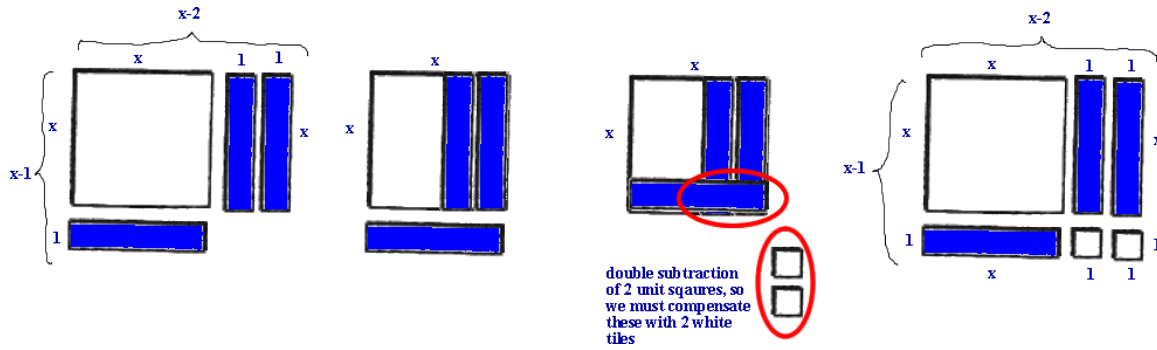


Forming of the expression $(x - 1)$ and $(x - 2)$:



Multiplication of algebra

Example: Expansion of $(x - 1)(x - 2)$ using algebraic tiles.



Basically, we are trying to form the area of a rectangle during the expansion of algebraic terms. Hence, let us count the area of the rectangle form. (Remember that the shaded tiles represent negative area)

$$\begin{aligned}
 (x-1)(x-2) &= (x \times x) - (1 \times x) - (1 \times x) - (1 \times x) + (1 \times 1) + (1 \times 1) \\
 &= x^2 - x - x - x + 1 + 1 \\
 &= x^2 - 3x + 2
 \end{aligned}$$

Exercise

Q1) Expand $(x + 1)(x + 2)$ and draw *the arrangement of algebraic tiles*.

$$(x+1)(x+2) =$$

Q2) Expand $(x - 1)(x + 2)$ and draw *the arrangement of algebraic tiles*.

$$(x-1)(x+2) =$$

Q3) Expand $(x + 2)(x + 2)$ and *draw the arrangement of algebraic tiles.*

$$(x + 2)(x + 2) =$$

Q4) Expand $(x - 2)(x - 2)$ and *draw the arrangement of algebraic tiles.*

$$(x - 2)(x - 2) =$$

Q5) Expand $(2x + 1)(x + 2)$ and *draw the arrangement of algebraic tiles.*

$$(2x + 1)(x + 2) =$$