

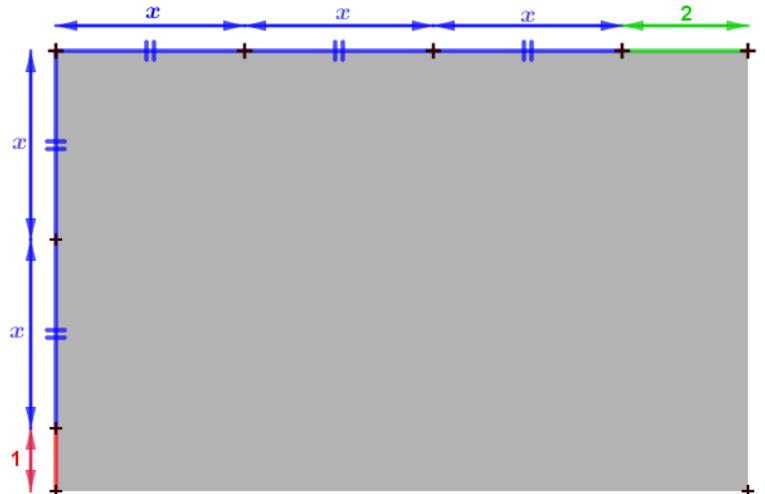
## ① Comment développer une expression algébrique ?

Développer et réduire  $(3x + 2)(2x + 1)$

**Etape ① : J'identifie les quatre nombres à distribuer :**

$$(3x + 2)(2x + 1)$$

$$(\boxed{\textcolor{red}{\square}} + \boxed{\textcolor{blue}{\square}}) \times (\boxed{\textcolor{green}{\square}} + \boxed{\textcolor{yellow}{\square}})$$

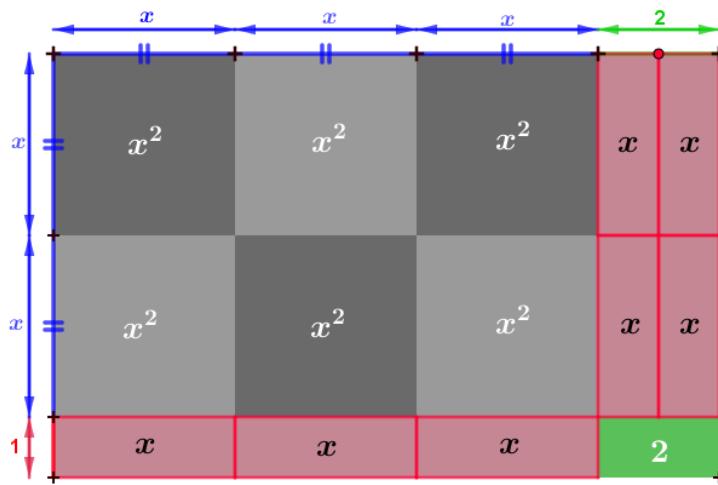


**Etape ② : Je distribue**

$$(\boxed{\textcolor{red}{\square}} + \boxed{\textcolor{blue}{\square}}) \times (\boxed{\textcolor{green}{\square}} + \boxed{\textcolor{yellow}{\square}}) = \textcolor{red}{\square} \times \boxed{\textcolor{green}{\square}} + \textcolor{red}{\square} \times \boxed{\textcolor{yellow}{\square}} + \boxed{\textcolor{blue}{\square}} \times \boxed{\textcolor{green}{\square}} + \boxed{\textcolor{blue}{\square}} \times \boxed{\textcolor{yellow}{\square}}$$

$$(3x + 2)(2x + 1) = \underbrace{3x \times 2x}_{6x^2} + \underbrace{3x \times 1}_{3x} + \underbrace{2 \times 2x}_{4x} + \underbrace{2 \times 1}_2$$

$$(3x + 2)(2x + 1) = 6x^2 + 3x + 4x + 2$$



**Etape ③ : Je réduis en calculant ce qu'il est possible de calculer**

$$(3x + 2)(2x + 1) = 6x^2 + 3x + 4x + 2$$

$$(3x + 2)(2x + 1) = 6x^2 + 7x + 2$$

**Etape ④ : Je m'exerce :**

Développez les expressions :

a)  $f(x) = (7 - 5x)(2x - 3)$   
 c)  $h(x) = (2 - 4x)(6x - 1)$

b)  $g(x) = (5x + 3)(7x - 2)$   
 d)  $k(x) = (-3x - 7)(2x - 9)$

**Etape 5 : Je me corrige :**

a)  $f(x) = (7 - 5x)(2x - 3)$

$$f(x) = (\textcolor{red}{7} - \textcolor{blue}{5x})(\textcolor{green}{2x} - \textcolor{yellow}{3})$$

$$f(x) = 7 \times 2x + 7 \times (-3) - 5x \times 2x - 5x \times (-3)$$

$$\begin{aligned} f(x) &= 14x - 21 - 10x^2 + 15x \\ f(x) &= -10x^2 + 29x - 21 \end{aligned}$$

b)  $g(x) = (5x + 3)(7x - 2)$

$$g(x) = (\textcolor{red}{5x} + \textcolor{blue}{3})(\textcolor{green}{7x} - \textcolor{yellow}{2})$$

$$g(x) = 5x \times 7x + 5x \times (-2) + 3 \times 7x + 3 \times (-2)$$

$$\begin{aligned} g(x) &= 35x^2 - 10x + 21x - 6 \\ g(x) &= 35x^2 + 11x - 6 \end{aligned}$$

c)  $h(x) = (2 - 4x)(6x - 1)$

$$h(x) = (\textcolor{red}{2} - \textcolor{blue}{4x})(\textcolor{green}{6x} - \textcolor{yellow}{1})$$

$$h(x) = 2 \times 6x + 2 \times (-1) - 4x \times 6x - 4x \times (-1)$$

$$\begin{aligned} h(x) &= 12x - 2 - 24x^2 + 4x \\ h(x) &= -24x^2 + 16x - 2 \end{aligned}$$

d)  $k(x) = (-3x - 7)(2x - 9)$

$$k(x) = (\textcolor{red}{-3x} - \textcolor{blue}{7})(\textcolor{green}{2x} - \textcolor{yellow}{9})$$

$$k(x) = (-3x) \times 2x + (-3x) \times (-9) - 7 \times 2x - 7 \times (-9)$$

$$\begin{aligned} k(x) &= -6x^2 + 27x - 14x + 63 \\ k(x) &= -6x^2 + 13x + 63 \end{aligned}$$