

**Entraînement 1** Relie les expressions égales ensemble

## Produits

$$\begin{aligned} & (4x + 5)^2 \quad \diamond \\ & (3x - 8)(3x + 8) \quad \diamond \\ & (2x + 1)^2 \quad \diamond \\ & (x - 5)^2 \quad \diamond \\ & (7 + 3x)^2 \quad \diamond \\ & (9 - x)^2 \quad \diamond \\ & (4 + x)(4 - x) \quad \diamond \\ & (3x - 5)(3x + 5) \quad \diamond \\ & (3x - 2)^2 \quad \diamond \end{aligned}$$

## Sommes

$$\begin{aligned} & \diamond 9x^2 - 64 \\ & \diamond x^2 - 10x + 25 \\ & \diamond 16x^2 + 40x + 25 \\ & \diamond 81 - 18x + x^2 \\ & \diamond 9x^2 - 25 \\ & \diamond 4x^2 + 4x + 1 \\ & \diamond 49 + 42x + 9x^2 \\ & \diamond 16 - x^2 \\ & \diamond 9x^2 - 12x + 4 \end{aligned}$$

## Factoriser une somme remarquable

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

$$\begin{aligned} E &= 4x^2 + 12x + 9 \\ E &= (2x + 3)^2 \end{aligned}$$

$$\begin{aligned} F &= 25x^2 - 40x + 16 \\ F &= (5x - 4)^2 \end{aligned}$$

$$\begin{aligned} G &= 49x^2 - 81 \\ G &= (7x - 9)(7x + 9) \end{aligned}$$

**Entraînement 2** Relie les expressions égales ensemble

## Sommes

$$\begin{aligned} & 4x^2 - 16x + 16 \quad \diamond \\ & 4x^2 - 25 \quad \diamond \\ & 4x^2 + 20x + 25 \quad \diamond \\ & 9 - 4x^2 \quad \diamond \\ & 9 - 12x + 4x^2 \quad \diamond \\ & 9 + 12x + 4x^2 \quad \diamond \end{aligned}$$

## Produits

$$\begin{aligned} & \diamond (2x + 5)^2 \\ & \diamond (2x - 4)^2 \\ & \diamond (2x + 5)(2x - 5) \\ & \diamond (3 - 2x)(3 + 2x) \\ & \diamond (2x + 3)^2 \\ & \diamond (3 - 2x)^2 \end{aligned}$$

## forme 1

**ON A 3 TERMES**

$$a^2 + 2 \times a \times b + b^2 = (a + b)^2$$

## forme 2

**ON A 3 TERMES**

$$a^2 - 2 \times a \times b + b^2 = (a - b)^2$$

## forme 3

**ON A 2 TERMES**

$$a^2 - b^2 = (a + b)(a - b)$$

**Entraînement 3** Factorise les sommes remarquables :

$$(3x)^2 \quad (5)^2$$



$$9x^2 + 30x + 25 = (3x + 5)^2$$

$$(2x)^2 \quad (6)^2$$



$$4x^2 - 24x + 36 = (2x - 6)^2$$

$$(7x)^2 \quad (4)^2$$



$$49x^2 - 16 = (7x + 4)(7x - 4)$$

$$\diamond x^2 + 4x + 4 = (\dots + \dots)^2$$

$$\diamond x^2 - 6x + 9 = (\dots - \dots)^2$$

$$\diamond x^2 - 9 = (\dots + \dots)(\dots - \dots)$$

$$\diamond 9a^2 + 12a + 4 = (\dots + \dots)^2$$

$$\diamond 16x^2 - 16x + 4 = (\dots - \dots)^2$$

$$\diamond 16x^2 - 25 = (\dots - \dots)(\dots + \dots)$$

$$\diamond 4x^2 + 4x + 1 =$$

$$\diamond 9x^2 - 54x + 81 =$$

$$\diamond 64 - 81x^2 =$$

$$\diamond 25x^2 + 40x + 16 =$$

$$\diamond 100x^2 - 140x + 49 =$$

$$\diamond 4x^2 - 100 =$$

**Entraînement 4** Factorise en utilisant les égalités remarquables

$$25x^2 + 20x + 4 =$$

$$36x^2 - 1 =$$

$$4x^2 - 12x + 9 =$$

$$49x^2 + 14x + 1 =$$

$$100x^2 - 80x + 16 =$$

$$x^2 - 81 =$$

$$81x^2 - 36 =$$

$$144x^2 + 24x + 1 =$$

$$144x^2 - 24x + 1 =$$

$$625x^2 - 100 =$$

$$4x^2 + 24x + 36 =$$

$$x^2 - 20x + 100 =$$

$$144x^2 - 121 =$$

$$144x^2 + 48x + 4 =$$

$$225 - 4x^2 =$$

**Entraînement 5** Complète les pointillés :

$$\diamond (3x - \dots)^2 = \dots - \dots + 9$$

$$\diamond \dots + 14y + \dots = (y + \dots)^2$$

$$\diamond x^2 - \dots + 100 = (\dots - \dots)^2$$

$$\diamond 64 + \dots + 9x^2 = (\dots + \dots)^2$$

