

Fiche 1 : Les identités remarquables

1°) Compléter en utilisant $a^2 + 2ab + b^2 = (a + b)^2$, et $a^2 - 2ab + b^2 = (a - b)^2$

- | | |
|---|--|
| a) $(3x - 1)^2 = \dots\dots\dots$ | f) $x^2 + 6x + \dots\dots = (\dots + \dots)^2$ |
| b) $(2x + \dots)^2 = \dots\dots + \dots\dots + 9$ | g) $4x^2 - \dots + 25 = (\dots - \dots)^2$ |
| c) $(\dots - 5)^2 = 4x^2 - \dots + \dots$ | h) $9x^2 - \dots + \dots = (\dots - 4)^2$ |
| d) $(5x + \dots)^2 = \dots + 20x + \dots$ | i) $\dots - 4x + 1 = (\dots - \dots)^2$ |
| e) $(\dots - 3)^2 = \dots - 12x + \dots$ | j) $\dots - \dots + 36 = (5x - \dots)^2$ |

2°) Compléter en utilisant $a^2 - b^2 = (a - b)(a + b)$

- | | |
|---|---|
| a) $(3x + 2)(3x - 2) = \dots\dots\dots$ | f) $81 - \dots = (\dots\dots\dots)(\dots + 2x)$ |
| b) $(2 - \dots)(\dots\dots) = \dots - 9x^2$ | g) $\dots - 36 = (x - \dots)(\dots\dots)$ |
| c) $(x + \dots)(\dots\dots) = \dots - 25$ | h) $9x^2 \dots = (\dots - 5)(\dots\dots)$ |
| d) $(\dots - 5x)(\dots\dots) = 4 - \dots$ | i) $\dots - 49 = (2x + \dots)(\dots\dots)$ |
| e) $(\dots\dots)(\dots - 1) = 4x^2 - \dots$ | j) $x^2 \dots = (\dots\dots)(\dots + 10)$ |

3°) Factoriser si possible les expressions suivantes en utilisant l'une des trois identités remarquables

- | | |
|---|-------------------------|
| a) $81x^2 - 18x + 4 = \dots\dots\dots$ | h) $64x^2 - 9 =$ |
| b) $4x^2 - 81 = \dots\dots\dots$ | i) $x^2 + 4xy + 4y^2 =$ |
| c) $25x^2 + 60x + 36 = \dots\dots\dots$ | j) $x^4 - 81 =$ |
| d) $x^2 - 22x + 121 = \dots\dots\dots$ | k) $16x^2 - 25 =$ |
| e) $9x^2 - 49 = \dots\dots\dots$ | l) $100 - x^2 =$ |
| f) $64 - 16x + x^2 = \dots\dots\dots$ | m) $4x^2 - 9 =$ |
| g) $16x^2 + 48x + 9 = \dots\dots\dots$ | n) $36x^2 - 25 =$ |

4°) Factoriser les expressions suivantes en utilisant $A^2 - B^2 = [A - B][A + B]$

(A et B étant 2 expressions littérales)

- a) $(3x - 1)^2 - 9 = [\dots\dots\dots][\dots\dots\dots] = (\dots\dots\dots)(\dots\dots\dots) = (\dots\dots\dots)(\dots\dots\dots)$
- b) $(5x + 2)^2 - (x + 1)^2 = [\dots\dots\dots][\dots\dots\dots] = (\dots\dots\dots)(\dots\dots\dots) = (\dots\dots\dots)(\dots\dots\dots)$
- c) $4(x - 2)^2 - 25 =$
- d) $(5x + 1)^2 - 9x^2 =$
- e) $4(x + 3)^2 - 36$