## SUJET A

**Développements :**

$A(x) = 3(2x-4)$ ; $B(x) = (6x+2)(-2x-3)$ ; $C(x) = (5-2x)^2$

$A(x) = 3\times 2x - 3\times 4$ $B(x) = -12x^2 - 18x - 4x - 6$ $C(x) = 5^2 - 2\times 5\times 2x + (2x)^2$

$\boxed{A(x) = 6x-12}$ $\boxed{B(x) = -12x^2 - 24x - 6}$ $\boxed{C(x) = 4x^2 - 20x + 25}$

**Factorisations :**

$D(x) = 4x+8$ ; $E(x) = (3x+1)(-2x-1) + (3x+1)(x+3)$ ; $F(x) = (x-4)^2 - (2x+3)^2$

$D(x) = 4x+4\times 2$ $E(x) = (3x+1)[(-2x-1) + (x+3)]$ $F(x) = [(x-4) + (2x+3)] \times [(x-4) - (2x+3)]$

$\boxed{D(x) = 4(x+2)}$ $E(x) = (3x+1)(-2x-1+x+3)$ $F(x) = (x-4+2x+3)(x-4-2x-3)$

$\boxed{E(x) = (3x+1)(-x+2)}$ $\boxed{F(x) = (3x-1)(-x-7)}$

**Équations :**

$4x-3 = 7$ ; $(x+2)(3x-1) = 3x^2+4x$

$\Leftrightarrow 4x-3+3 = 7+3$ $\Leftrightarrow 3x^2 - x + 6x - 2 = 3x^2 + 4x$

$\Leftrightarrow 4x = 10$ $\Leftrightarrow 3x^2 + 5x - 2 + 2 - 3x^2 - 4x = 3x^2 - 3x^2 + 4x - 4x + 2$

$\Leftrightarrow x = \frac{10}{4}$ $\Leftrightarrow \boxed{x = 2}$

$\Leftrightarrow \boxed{x = 2{,}5}$

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## SUJET B

**Développements :**

$A(x) = 4(3x-2)$ ; $B(x) = (2x+6)(-4x-1)$ ; $C(x) = (4-3x)^2$

$A(x) = 4\times 3x - 4\times 2$ $B(x) = -8x^2 - 2x - 24x - 6$ $C(x) = 4^2 - 2\times 4\times 3x + (3x)^2$

$\boxed{A(x) = 12x-8}$ $\boxed{B(x) = -8x^2 - 26x - 6}$ $\boxed{C(x) = 9x^2 - 24x + 16}$

**Factorisations :**

$D(x) = 6x+12$ ; $E(x) = (3x-1)(2x-4) + (3x-1)(x+3)$ ; $F(x) = (2x-4)^2 - (x+3)^2$

$D(x) = 6x+6\times 2$ $E(x) = (3x-1)[(2x-4) + (x+3)]$ $F(x) = [(2x-4) + (x+3)] \times [(2x-4) - (x+3)]$

$\boxed{D(x) = 6(x+2)}$ $E(x) = (3x-1)(2x-4+x+3)$ $F(x) = (2x-4+x+3)(2x-4-x-3)$

$\boxed{E(x) = (3x-1)(3x-1) = (3x-1)^2}$ $\boxed{F(x) = (3x-1)(x-7)}$

**Équations :**

$5x-7 = 9$ ; $(2x+1)(3x-1) = 6x^2+4x$

$\Leftrightarrow 5x-7+7 = 9+7$ $\Leftrightarrow 6x^2 - 2x + 3x - 1 = 6x^2 + 4x$

$\Leftrightarrow 5x = 16$ $\Leftrightarrow 6x^2 + x - 1 + 1 - 6x^2 - 4x = 6x^2 - 6x^2 + 4x - 4x + 1$

$\Leftrightarrow x = \frac{16}{5}$ $\Leftrightarrow -3x = 1$

$\Leftrightarrow \boxed{x = 3{,}2}$ $\Leftrightarrow \boxed{x = -\frac{1}{3}}$