Correction fiche 1 développement

1) $x(-2x+3)+8x = -2x^2+3x+8x$
$= \underline{-2x^2+11x}$

2) $(5-2x)^2 = 25-20x+4x^2$
$= \underline{4x^2-20x+25}$

3) $(2x-1)(4-x) = 8x-2x^2-4+x$
$= \underline{-2x^2+9x-4}$

4) $-4x(-3x-5) = \underline{12x^2+20x}$

5) $3x(7x-2)^2 = 3x(49x^2-28x+4)$
$= \underline{147x^3-84x^2+12x}$

6) $(x-3)(x^2-x+3) = x^3-x^2+3x-3x^2+3x-9$
$= \underline{x^3-4x^2+6x-9}$

7) $(3x-5)^2+2(x+1)^2 = 9x^2-30x+25+2(x^2+2x+1)$
$= \underline{11x^2-26x+27}$

8) $(x+2)(2x-3)-(x+4)^2 = 2x^2-3x+4x-6-(x^2+8x+16)$
$= 2x^2+x-6-x^2-8x-16$
$= \underline{x^2-7x-22}$

9) $-(6x+1)(3-2x)^2 = (-6x-1)(9-12x+4x^2)$
$= -54x+78x^2-24x^3-9+12x-4x^2$
$= \underline{-24x^3+68x^2-42x-9}$

10) $-4x(x+1)^3(1-x)^2+3x^2 = -4x(x^2+2x+1)(1-2x+x^2)+3x^2$
$= (-4x^3-8x^2-4x)(1-2x+x^2)+3x^2$
$= -4x^3+8x^4-4x^5-8x^2+16x^3-8x^4-4x+8x^2-4x^3+3x^2$
$= \underline{-4x^5+8x^3+3x^2-4x}$

11) $2(x+1)^2-5x(3-x) = 2(x^2+2x+1)-15x+5x^2$
$= 2x^2+4x+2-15x+5x^2$
$= \underline{7x^2-11x+2}$

12) $x(2x-1)(-x-3) = (2x^2-x)(-x-3)$
$= -2x^3-6x^2+x^2+3x$
$= \underline{-2x^3-5x^2+3x}$

13) $(2x-5)(x-3)(2-4x) = (2x^2-6x-5x+15)(2-4x)$
$= (2x^2-11x+15)(2-4x)$
$= 4x^2-8x^3-22x+44x^2+30-60x$
$= \underline{-8x^3+48x^2-82x+30}$

14) $(\sqrt{2}x+2)(x-\sqrt{2}) = \sqrt{2}x^2-2x+2x-2\sqrt{2}$
$= \underline{\sqrt{2}x^2-2\sqrt{2}}$

15) $(3x-\sqrt{2})^2+5\sqrt{2}x = 9x^2-6\sqrt{2}x+2+5\sqrt{2}x$
$= \underline{9x^2-\sqrt{8}x+2}$

16) $\frac{2x-1}{5}-\frac{x-1}{2}-1 = \frac{4x-2-5x+5-10}{10}$
$= \underline{-\frac{x}{10}-\frac{7}{10}}$

17) $\frac{(x+1)}{2x-3}-\frac{3-x}{4x} = \frac{4x(x+1)-(2x+3)(3-x)}{4x(2x-1)}$
$= \frac{4x^2+4x-(6x-2x^2+9-3x)}{8x^2-4x}$
$= \underline{\frac{4x^2+4x-6x+2x^2-9+3x}{8x^2-4x}}$

18) $-(3x-2)^2-\left(\frac{x+4}{3}\right)^2 = -(9x^2-12x+4)-\frac{x^2+8x+16}{9}$
$= \frac{-81x^2+108x+36-x^2-8x-16}{9}$
$= \underline{\frac{-82x^2+100x+20}{9}}$

19) $\frac{(x+2)^2}{1-x}-\frac{3x(x-2)}{1+x} = \frac{(1+x)(x^2+4x+4)-(1-x)(3x^2-6x)}{(1-x)(1+x)}$
$= \frac{x^2+4x+4+x^3+4x^2+4x-3x^2+6x+3x^3-6x^2}{1-x^2}$
$= \underline{\frac{4x^3-4x^2+14x+4}{1-x^2}}$

20) $\frac{(2x-1)(4-x)}{2-x}-\frac{(3-x)^2}{(2x-1)} = \frac{8x-2x^2-4+x}{2-x}-\frac{9-6x+x^2}{2x-1}$
$= \frac{-2x^2+9x-4}{2-x}-\frac{x^2-6x+9}{2x-1}$
$= \frac{(2x-1)(-2x^2+9x-4)+(x-2)(x^2-6x+9)}{(2x-1)(2-x)}$
$= \frac{-4x^3+18x^2-8x+2x^2-9x+4+x^3-6x^2+9-2x^2+12x-18}{4x-2x^2-2+x}$
$= \underline{\frac{-3x^3+12x^2+5x-14}{-2x^2+5x-2}}$