

Corrigé du devoir de mathématiques

1. $(2x + 1)^2 - 1 = 4x^2 + 4x$
2. $5x - (3x + 5)^2 = -9x^2 - 25x - 25$
3. $4 \left(x - \frac{1}{7}\right) \left(x + \frac{3}{7}\right) = 4x^2 + \frac{8}{7}x - \frac{12}{49}$
4. $(x - 3)(2x + 5) - 2(2x + 5) = (2x + 5)(x - 5)$
5. $(1 + 2x)^2 - (2 - x)^2 = (3x - 1)(x + 3)$
6. $(2x + 3)(5x - 1) - (2x + 3) = (2x + 3)(5x - 2)$
7. $2 - \frac{2 - \frac{1}{2}}{1 + \frac{1}{2}} = 2 - \frac{\frac{3}{2}}{\frac{3}{2}} = 2 - 1 = 1$
8. $\frac{1}{2} - \frac{3x + 1}{x + 1} = \frac{-5x - 1}{2(x + 1)}$
9. $\frac{24 - \sqrt{8}}{6} = \frac{2 \times 12 - 2\sqrt{2}}{2 \times 3} = \frac{12 - \sqrt{2}}{3}$
10. $3x^2 = 7x \iff x(3x - 7) = 0$ et $\mathcal{S} = \left\{0; \frac{7}{3}\right\}$
11. $(3x + 1)^2 = 5 \iff (3x + 1 = \sqrt{5} \text{ ou } 3x + 1 = -\sqrt{5})$ et $\mathcal{S} = \left\{\frac{\sqrt{5} - 1}{3}; \frac{-\sqrt{5} - 1}{3}\right\}$
- 12.

x	$-\infty$	-1	$2/3$	$+\infty$
$1 + x$	-	\emptyset	+	+
$2 - 3x$	+		\emptyset	-
$f(x)$	-	\emptyset	+	-

13. $\overrightarrow{AB}(-2; 6)$ et $AB = \sqrt{(-2)^2 + 6^2} = \sqrt{40} = 2\sqrt{10}$