

LDDR-Niveau 2: TE 8: Calcul Algébrique

$$\begin{aligned} 1. \quad & \begin{cases} 10x = 3,\bar{9} \\ 100x = 39,\bar{9} \end{cases} \quad \left\{ \begin{array}{l} 100x - 10x = 36 \Leftrightarrow 90x = 36 \Leftrightarrow \\ x = \frac{36}{90} = \frac{2}{5} \end{array} \right. \end{aligned}$$

$$2. \quad P(x) = 1 - (x - 3(x+2))$$

$$P(-2) = 1 - (-2 - 3(-2+2)) = 1 - (-2) = 3$$

$$3. \quad \frac{1 - \frac{3}{4}}{1 + \frac{3}{4}} = \frac{\frac{4-3}{4}}{\frac{4+3}{4}} = \frac{1}{7}$$

$$4. \quad \frac{12\sqrt{50}}{\sqrt{3}} = \frac{12 \cdot 5\sqrt{2}}{\sqrt{3}} = \frac{12 \cdot 5 \cdot \sqrt{2}\sqrt{3}}{3} = 20\sqrt{6}$$

$$5. \quad a) \quad 3 - (5-x) - 3(x+2) = 3 - 5 + x - 3x - 6 = -2x - 8$$

$$b) \quad (-2x^2 + 3)^2 = 4x^4 - 12x^2 + 9$$

$$c) \quad 2x(x-3)(x+3) = 2x(x^2-9) = 2x^3 - 18x$$

$$6. \quad a) \quad 16c^2 - 24cd + 9d^2 = (4c - 3d)^2$$

$$\begin{aligned} b) \quad 2 - 50y^2 &= (\sqrt{2} - \sqrt{50}y)(\sqrt{2} + \sqrt{50}y) = (\sqrt{2} - 5\sqrt{2}y)(\sqrt{2} + 5\sqrt{2}y) \\ &= \sqrt{2}(1 - 5y)\sqrt{2}(1 + 5y) = 2(1 - 5y)(1 + 5y) \end{aligned}$$

$$c) \quad x^2 - 2x - 15 = (x-5)(x+3)$$