

TF Calcul technique numérique et calcul littéral - corrigé MATH 10VP

1.

a) $3^{-4} \cdot 3^2 \cdot 9^2 = 3^{-2} \cdot (3^2)^2 = \mathbf{3^2}$

b) $\frac{\sqrt{4^3}}{\sqrt{8^2 \cdot 4}} = \frac{4 \cdot 2}{8 \cdot 2} = \frac{1}{2}$

c) $\frac{\left((5^{-1})^{-2}\right)^2}{5^4} = \frac{5^4}{5^4} = 1$

d) $10^{-5} \cdot 10^2 : 10^3 = \mathbf{10^{-6}}$

e) $\sqrt{\sqrt{11^4} + \sqrt{5^4} + \sqrt{50^2}} = \sqrt{11^2 + 5^2 + 50} = \sqrt{196} = 14$

f) $\frac{\sqrt{75}}{\sqrt{147}} = \frac{5\sqrt{3}}{7\sqrt{3}} = \frac{5}{7}$

2.

a) $-\frac{5}{12} : \frac{15}{36} + \frac{1}{2} = -\frac{5}{12} \cdot \frac{36}{15} + \frac{1}{2} = -1 + \frac{1}{2} = -\frac{1}{2}$

b) $\frac{1}{4} - \frac{6}{5} : \frac{3}{5} = \frac{1}{4} - \frac{6}{5} \cdot \frac{5}{3} = \frac{1}{4} - 2 = -\frac{7}{4}$

c) $2 \cdot \left(-\frac{3}{52}\right) - \frac{6}{26} = -\frac{9}{26}$

d) $\left(\frac{2}{7} - \frac{3}{5}\right) : \frac{22}{35} = -\frac{1}{2}$

3.

a) $ax^2y + 2a^2xy - 2ax^2y = \mathbf{2a^2xy - ax^2y}$

b) $-mn^2 - 2mn^2 + 3m = \mathbf{-3mn^2 + 3m}$

c) $2x(-xy + 3) = \mathbf{-2x^2y + 6x}$

d) $(2x + 4)^2 = \mathbf{4x^2 + 16x + 16}$

4.

a) $(-3ab) \cdot 2a^2b^3 = \mathbf{-6a^3b^4}$

b) $6y^2(y - 3x^2y) = \mathbf{-18x^2y^3 - 6y^3}$

c) $(x + 3)^2 = \mathbf{x^2 + 6x + 9}$

d) $-2b^2 - 2b^2 \cdot 3 = \mathbf{-8b^2}$

e) $(25xy^2 - 6x^2y) - (2x^2y + 3xy - 10xy^2) = \mathbf{-8x^2y + 35xy^2 - 3xy}$

f) $((z^{-1})^{-2})^{-3} = \mathbf{z^{-6}}$