Contrôle

Calculer les expressions suivantes :

$A = 3\sqrt{8} + \sqrt{80} + 5\sqrt{2} + 7\sqrt{5} + 10\sqrt{18}$

$B = 5\sqrt{27} + 4\sqrt{9} - 6\sqrt{12} + 2\sqrt{25} - 7\sqrt{48}$

$C = \left(5\sqrt{3} + \sqrt{32} + \sqrt{18}\right)\left(\sqrt{27} - \sqrt{12} + 7\sqrt{2}\right)$

$D = \left(3\sqrt{2} - 5\right)^2 - \left(\sqrt{2} + 3\right)^2 + 18\left(1 + 2\sqrt{2}\right) - 50$

$E = \left(\sqrt{57} - 3\sqrt{27}\right)^2 - \left(9\sqrt{3} - \sqrt{57}\right)^2$

$F = \sqrt{25\left(\sqrt{2} - \sqrt{3}\right)^2}$

$G = \dfrac{\sqrt{6}}{\sqrt{2} - \sqrt{3}} + \dfrac{5}{\sqrt{2} + \sqrt{3}}$

$H = \dfrac{\sqrt{3}}{\sqrt{2} + 5} - \dfrac{\sqrt{2} - 5}{\sqrt{3}}$

$I = \dfrac{\sqrt{a^3 b^5}}{\sqrt{9ab^2}}$ (a et b étant deux réels strictement positifs)

$J = \sqrt{\dfrac{3 + \sqrt{2}}{3 - \sqrt{2}}} - \sqrt{\dfrac{\sqrt{3} - 1}{\sqrt{3} + 1}}$

Corrigé du contrôle

$A = 3\sqrt{8} + \sqrt{80} + 5\sqrt{2} + 7\sqrt{5} + 10\sqrt{18}$

$A = 6\sqrt{2} + 11\sqrt{5} + 5\sqrt{2} + 7\sqrt{5} + 30\sqrt{2}$

$A = 41\sqrt{2} + 11\sqrt{5}$

$B = 5\sqrt{27} + 4\sqrt{9} - 6\sqrt{12} + 2\sqrt{25} - 7\sqrt{48}$

$B = 15\sqrt{3} + 12 - 12\sqrt{3} + 10 - 7 \times 4\sqrt{3}$

$B = 22 - 25\sqrt{3}$

$C = \left(5\sqrt{3} + \sqrt{32} + \sqrt{18}\right)\left(\sqrt{27} - \sqrt{12} + 7\sqrt{2}\right)$

$C = \left(5\sqrt{3} + 4\sqrt{2} + 3\sqrt{2}\right)\left(3\sqrt{3} - 2\sqrt{3} + 7\sqrt{2}\right)$

$C = \left(5\sqrt{3} + 7\sqrt{2}\right)\left(\sqrt{3} + 7\sqrt{2}\right)$

$C = 113 + 42\sqrt{6}$

$D = \left(3\sqrt{2} - 5\right)^2 - \left(\sqrt{2} + 3\right)^2 + 18\left(1 + 2\sqrt{2}\right) - 50$

$D = 18 + 25 - 30\sqrt{2} - 2 - 9 + 6\sqrt{2} + 18 + 36\sqrt{2} - 50$

$D = 0$

$E = \left(\sqrt{57} - 3\sqrt{27}\right)^2 - \left(9\sqrt{3} - \sqrt{57}\right)^2$

$E = 57 + 243 - 6\sqrt{57 \times 27} - 243 - 57 + 18\sqrt{3 \times 57}$

$E = 18\sqrt{9 \times 19} - 6\sqrt{81 \times 19}$

$E = 54\sqrt{19} - 54\sqrt{19}$

$E = 0$

$F = \sqrt{25\left(\sqrt{2} - \sqrt{3}\right)^2}$

$F = 5\left|\sqrt{2} - \sqrt{3}\right|$

$F = 5\left(\sqrt{3} - \sqrt{2}\right)$

$F = 5\sqrt{3} - 5\sqrt{2}$

$$G = \frac{\sqrt{6}}{\sqrt{2}-\sqrt{3}} + \frac{5}{\sqrt{2}+\sqrt{3}}$$
$$G = \frac{\sqrt{6}\left(\sqrt{2}+\sqrt{3}\right)}{2-3} + \frac{5\left(\sqrt{2}-\sqrt{3}\right)}{2-3}$$
$$G = -\sqrt{12} - \sqrt{18} - 5\sqrt{2} + 5\sqrt{3}$$
$$G = -2\sqrt{3} - 3\sqrt{2} - 5\sqrt{2} + 5\sqrt{3}$$
$$G = 3\sqrt{3} - 8\sqrt{2}$$

$$H = \frac{\sqrt{3}}{\sqrt{2}+5} - \frac{\sqrt{2}-5}{\sqrt{3}}$$
$$H = \frac{\sqrt{3}\left(\sqrt{2}-5\right)}{\left(\sqrt{2}+5\right)\left(\sqrt{2}-5\right)} - \frac{\sqrt{6}-5\sqrt{3}}{3}$$
$$H = \frac{\sqrt{6}-5\sqrt{3}}{2-25} - \frac{\sqrt{6}-5\sqrt{3}}{3}$$
$$H = \frac{\sqrt{6}-5\sqrt{3}}{-23} - \frac{\sqrt{6}-5\sqrt{3}}{3}$$
$$H = \frac{-3\sqrt{6}+15\sqrt{3}-23\sqrt{6}+115\sqrt{3}}{69}$$
$$H = \frac{-26\sqrt{6}+130\sqrt{3}}{69}$$

$$I = \frac{\sqrt{a^3b^5}}{\sqrt{9ab^2}}$$
$$I = \sqrt{\frac{a^3b^5}{9ab^2}}$$
$$I = \sqrt{\frac{a^2b^2b}{9}}$$
$$I = \frac{ab\sqrt{b}}{3}$$

$$J = \sqrt{\frac{3+\sqrt{2}}{3-\sqrt{2}}} - \sqrt{\frac{\sqrt{3}-1}{\sqrt{3}+1}}$$

$$J = \sqrt{\frac{\left(3+\sqrt{2}\right)^2}{3^2-2}} - \sqrt{\frac{\left(\sqrt{3}-1\right)^2}{3-1}}$$

$$J = \frac{\left|3+\sqrt{2}\right|}{\sqrt{7}} - \frac{\left|\sqrt{3}-1\right|}{\sqrt{2}}$$

$$J = \frac{3+\sqrt{2}}{\sqrt{7}} - \frac{\sqrt{3}-1}{\sqrt{2}}$$

$$J = \frac{\sqrt{7}\left(3+\sqrt{2}\right)}{7} - \frac{\sqrt{2}\left(\sqrt{3}-1\right)}{2}$$

$$J = \frac{3\sqrt{7}+\sqrt{14}}{7} - \frac{\sqrt{6}-\sqrt{2}}{2}$$

$$J = \frac{2\left(3\sqrt{7}+\sqrt{14}\right)}{2\times 7} - \frac{7\left(\sqrt{6}-\sqrt{2}\right)}{7\times 2}$$

$$J = \frac{2\sqrt{14}+6\sqrt{7}}{14} - \frac{7\sqrt{6}-7\sqrt{2}}{14}$$

$$J = \frac{2\sqrt{14}+6\sqrt{7}-7\sqrt{6}+7\sqrt{2}}{14}$$