

RACINES CARRÉES

SÉRIES 2 ET 2 BIS

Calcul mental et automatismes – IREM de Clermont-Ferrand

Calculer et donner le
résultat sous une forme la
plus simple possible.

N°0 : deux exemples

$$\begin{aligned} 3\sqrt{2} \times 7\sqrt{3} \\ &= 3 \times 7 \times \sqrt{2 \times 3} \\ &= 21\sqrt{6} \end{aligned}$$

$$\begin{aligned} 2\sqrt{5} + 3\sqrt{5} \\ &= 5\sqrt{5} \end{aligned}$$

Nº1

$$\sqrt{2} + 3\sqrt{2} - 5\sqrt{2}$$

$$\sqrt{5} - 4\sqrt{5} + 2\sqrt{5}$$

Nº2

$$4\sqrt{5} + \sqrt{3} - 3\sqrt{5}$$

$$2\sqrt{2} + \sqrt{3} - 3\sqrt{2}$$

Nº3

$$2\sqrt{3} \times 2\sqrt{3}$$

$$3\sqrt{2} \times 3\sqrt{2}$$

Nº4

$$\sqrt{32} - \sqrt{2}$$

$$\sqrt{12} + \sqrt{3}$$

Nº5

$$\sqrt{20} + \sqrt{5}$$

$$\sqrt{2} - \sqrt{8}$$

Nº6

$$\sqrt{20} \div \sqrt{5}$$

$$\sqrt{2} \div \sqrt{8}$$

Nº7

$$\left(1 - \sqrt{3}\right)^2$$

$$\left(\sqrt{5} + 1\right)^2$$

Nº8

$$\sqrt{81} \times \sqrt{25}$$

$$\sqrt{49} \times \sqrt{36}$$

Nº9

$$(\sqrt{2} - \sqrt{7})(\sqrt{2} + \sqrt{7})$$

$$(\sqrt{5} + \sqrt{11})(\sqrt{5} - \sqrt{11})$$

Nº10

$$\sqrt{3} \div \sqrt{27}$$

$$\sqrt{32} \div \sqrt{2}$$

CORRECTION

Nº1

$$\begin{aligned}\sqrt{2} + 3\sqrt{2} - 5\sqrt{2} \\ = -\sqrt{2}\end{aligned}$$

$$\begin{aligned}\sqrt{5} - 4\sqrt{5} + 2\sqrt{5} \\ = -\sqrt{5}\end{aligned}$$

Nº2

$$\begin{aligned} 4\sqrt{5} + \sqrt{3} - 3\sqrt{5} \\ = \sqrt{5} + \sqrt{3} \end{aligned}$$

$$\begin{aligned} 2\sqrt{2} + \sqrt{3} - 3\sqrt{2} \\ = \sqrt{3} - \sqrt{2} \end{aligned}$$

Nº3

$$2\sqrt{3} \times 2\sqrt{3} \\ = 12$$

$$3\sqrt{2} \times 3\sqrt{2} \\ = 18$$

Nº4

$$\begin{aligned}\sqrt{32} - \sqrt{2} \\ = 3\sqrt{2}\end{aligned}$$

$$\begin{aligned}\sqrt{12} + \sqrt{3} \\ = 3\sqrt{3}\end{aligned}$$

Nº5

$$\begin{aligned}\sqrt{20} + \sqrt{5} \\ = 3\sqrt{5}\end{aligned}$$

$$\begin{aligned}\sqrt{2} - \sqrt{8} \\ = -\sqrt{2}\end{aligned}$$

Nº6

$$\sqrt{20} \div \sqrt{5} \\ = 2$$

$$\sqrt{2} \div \sqrt{8} \\ = \frac{1}{2} = 0,5$$

Nº7

$$\begin{aligned} & (1 - \sqrt{3})^2 \\ &= 4 - 2\sqrt{3} \end{aligned}$$

$$\begin{aligned} & (\sqrt{5} + 1)^2 \\ &= 6 + 2\sqrt{5} \end{aligned}$$

Nº8

$$\sqrt{81} \times \sqrt{25} \\ = 45$$

$$\sqrt{49} \times \sqrt{36} \\ = 42$$

Nº9

$$(\sqrt{2} - \sqrt{7})(\sqrt{2} + \sqrt{7})$$

$$= -5$$

$$(\sqrt{5} + \sqrt{11})(\sqrt{5} - \sqrt{11})$$

$$= -6$$

Nº10

$$\sqrt{3} \div \sqrt{27}$$

$$= \frac{1}{3}$$

$$\sqrt{32} \div \sqrt{2}$$

$$= 4$$

FIN