

Tous les résultats doivent être donnés avec des racines simplifiées

1. Simplifier :  $\sqrt{45} = \sqrt{9 \times 5} = \sqrt{9} \times \sqrt{5} = \boxed{3\sqrt{5}}$

2. Ecrire sous la forme  $\sqrt{a}$  :  $4\sqrt{2} = \sqrt{16} \times \sqrt{2} = \boxed{\sqrt{32}}$

3. Calculer et donner le résultat sous la forme la plus simple.

$$\sqrt{5} \times \sqrt{3} = \boxed{\sqrt{15}}$$

$$3\sqrt{2} \times \sqrt{2} = 3 \times 2 = \boxed{6}$$

$$(5\sqrt{3})^2 = 5^2 \times \sqrt{3}^2 = 25 \times 3 = \boxed{75}$$

$$(2\sqrt{3})^3 = 2^3 \times \sqrt{3}^3 = 8 \times \sqrt{3}^2 \times \sqrt{3} = 8 \times 3 \sqrt{3} = \boxed{24\sqrt{3}}$$

$$2\sqrt{5}(\sqrt{5} - 3\sqrt{2}) = 2 \times 5 - 6\sqrt{10} = \boxed{10 - 6\sqrt{10}}$$

$$\frac{\sqrt{2}}{\sqrt{7}} = \frac{\sqrt{2}}{\sqrt{7}} = \frac{\sqrt{2}}{\sqrt{7}} \times \frac{1}{\sqrt{7}} = \boxed{\frac{\sqrt{2}}{7}}$$

$$\sqrt{27} + \sqrt{75} = \sqrt{9 \times 3} + \sqrt{25 \times 3} = 3\sqrt{3} + 5\sqrt{3} = \boxed{8\sqrt{3}}$$

$$\sqrt{2\sqrt{16} + \sqrt{100}} = \sqrt{2 \times 4 + 10} = \sqrt{18} = \sqrt{9 \times 2} = \boxed{3\sqrt{2}}$$

$$(\sqrt{7} - \sqrt{3})^2 = \sqrt{7}^2 - 2 \times \sqrt{7} \times \sqrt{3} + \sqrt{3}^2 = 7 - 2\sqrt{21} + 3 = \boxed{10 - 2\sqrt{21}}$$

$$3 - (2\sqrt{2} + \sqrt{5})^2 = 3 - ((2\sqrt{2})^2 + 2 \times 2\sqrt{2} \times \sqrt{5} + \sqrt{5}^2) \\ = 3 - (8 + 4\sqrt{10} + 5) = 3 - 8 - 4\sqrt{10} - 5 \\ = \boxed{-10 - 4\sqrt{10}}$$

4. Supprimer la racine carrée au dénominateur :

$$\frac{3}{\sqrt{11}} = \boxed{\frac{3\sqrt{11}}{11}}$$

$$\frac{3}{2 + \sqrt{2}} = \frac{3(2 - \sqrt{2})}{(2 + \sqrt{2})(2 - \sqrt{2})} = \frac{3(2 - \sqrt{2})}{4 - 2} = \boxed{\frac{6 - 3\sqrt{2}}{2}}$$

Tous les résultats doivent être donnés avec des racines simplifiées

1. Simplifier :  $\sqrt{20} = \sqrt{4 \times 5} = \sqrt{4} \times \sqrt{5} = \boxed{2\sqrt{5}}$

2. Ecrire sous la forme  $\sqrt{a}$  :  $5\sqrt{3} = \sqrt{25} \times \sqrt{3} = \boxed{\sqrt{75}}$

3. Calculer et donner le résultat sous la forme la plus simple.

$$\sqrt{3} \times \sqrt{7} = \boxed{\sqrt{21}}$$

$$2\sqrt{3} \times \sqrt{3} = 2 \times 3 = \boxed{6}$$

$$(4\sqrt{5})^2 = 16 \times \sqrt{5}^2 = 16 \times 5 = \boxed{80}$$

$$(3\sqrt{2})^3 = 3^3 \times \sqrt{2}^3 = 27 \times \sqrt{2}^2 \times \sqrt{2} = 27 \times 2 \times \sqrt{2} = \boxed{54\sqrt{2}}$$

$$3\sqrt{2}(\sqrt{2} - 4\sqrt{3}) = 3 \times 2 - 12\sqrt{6} = \boxed{6 - 12\sqrt{6}}$$

$$\frac{\sqrt{5}}{\sqrt{3}} = \frac{\sqrt{5}}{\sqrt{3}} = \frac{\sqrt{5}}{\sqrt{3}} \times \frac{1}{\sqrt{3}} = \boxed{\frac{\sqrt{5}}{3}}$$

$$\sqrt{50} + \sqrt{8} = \sqrt{25 \times 2} + \sqrt{4 \times 2} = \sqrt{25} \times \sqrt{2} + \sqrt{4} \times \sqrt{2} = 5\sqrt{2} + 2\sqrt{2} \\ = \boxed{7\sqrt{2}}$$

$$\sqrt{3\sqrt{25} + \sqrt{9}} = \sqrt{3 \times 5 + 3} = \sqrt{15 + 3} = \sqrt{18} = \sqrt{9 \times 2} = \sqrt{9} \times \sqrt{2} = \boxed{3\sqrt{2}}$$

$$(\sqrt{5} - \sqrt{7})^2 = \sqrt{5}^2 - 2 \times \sqrt{5} \times \sqrt{7} + \sqrt{7}^2 = 5 - 2\sqrt{35} + 7 = \boxed{12 - 2\sqrt{35}}$$

$$5 - (3\sqrt{2} + \sqrt{3})^2 = 5 - ((3\sqrt{2})^2 + 2 \times 3\sqrt{2} \times \sqrt{3} + (\sqrt{3})^2) \\ = 5 - (18 + 6\sqrt{6} + 3) \\ = 5 - 18 - 6\sqrt{6} - 3 = \boxed{-16 - 6\sqrt{6}}$$

4. Supprimer la racine carrée au dénominateur :

$$\frac{2}{\sqrt{7}} = \boxed{\frac{2\sqrt{7}}{7}}$$

$$\frac{2}{3 + \sqrt{3}} = \frac{2(3 - \sqrt{3})}{(3 + \sqrt{3})(3 - \sqrt{3})} = \frac{6 - 2\sqrt{3}}{9 - 3} = \frac{6 - 2\sqrt{3}}{6} = \frac{2(3 - \sqrt{3})}{2 \times 3} = \boxed{\frac{3 - \sqrt{3}}{3}}$$