

Exercicis de radicals – 4t d'ESO

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Proveu de simplificar les expressions següents:

1. $\sqrt{8} - \frac{2}{\sqrt{2}}$

2. $\sqrt[6]{0.008^{-4}}$

3. $\frac{\sqrt{54} \sqrt[3]{80} \sqrt{5}}{\sqrt[12]{500}}$

4. $\frac{\sqrt{a} \sqrt{b} \sqrt{a}}{\sqrt{ab}}$

5. $\frac{\sqrt[7]{x^{1000}}}{x^{142}}$

6. $\frac{\sqrt{2} + 1}{\sqrt{2} - 1}$

7. $\frac{\sqrt[3]{648} - \sqrt[3]{375}}{\sqrt[3]{9}}$

8. $\sqrt[3]{\frac{1}{1,331}}$

9. $\frac{\sqrt[4]{a^7 b^{10}} \sqrt[10]{(a^2 b^{-2})^5}}{\sqrt[6]{a^7 b^{-13}}}$

10. $\frac{\sqrt{27} \sqrt{a} - \sqrt[4]{a^5}}{a - 3\sqrt{3}}$

11. $\frac{\sqrt{xy^2} \sqrt[6]{x^7 y}}{\sqrt[3]{x^7 y}}$

12. $\sqrt{x} \sqrt{x} \sqrt{x} \sqrt{x} = a \implies x = ?$

13. $\frac{\sqrt{a^3} - \sqrt{a}}{\sqrt{a^5} - \sqrt{a}}$

14. $\frac{1}{\sqrt[12]{216^{-8}}}$

15. $\frac{3\sqrt{2}}{\sqrt{6}(\sqrt{3} - \sqrt{2})}$

16. $\frac{\sqrt{18} - \sqrt{\frac{25}{50}} + \sqrt{8}}{\sqrt{6}}$

17. $\frac{\sqrt{x} \sqrt{x} \sqrt[5]{x} \sqrt{x}}{\sqrt[4]{x} \sqrt{x}}$

18. $\frac{\sqrt{2}}{\sqrt{1 + \sqrt{3}}}$

19. $x + \sqrt{x} = \frac{15}{4} \implies x = ?$

20. $\sqrt{3} + 2\sqrt{3} + 3\sqrt{3} + \dots + 1000\sqrt{3}$

Solucions:

1. $\sqrt{2}$. 2. 25. 3. $6\sqrt{3}$. 4. $\frac{\sqrt[4]{a^2 b^3}}{b}$. 5. $\sqrt[7]{x^6}$. 6. $3 + 2\sqrt{2}$.

7. $\frac{\sqrt[3]{9}}{3}$. 8. $\frac{10}{11}$. 9. $ab^3 \sqrt[12]{a^7 b^8}$. 10. $-\sqrt[4]{a}$. 11. $\frac{\sqrt[6]{x^2 y^5}}{x}$.

12. $x = \sqrt[15]{a^{16}}$. 13. $\frac{1}{a+1}$. 14. 36. 15. $3 + \sqrt{6}$. 16. $\frac{3\sqrt{3}}{2}$. 17. $\sqrt[40]{x^{27}}$.

18. $\sqrt{\sqrt{3} - 1}$. 19. $x = \frac{9}{4}$. 20. $500500\sqrt{3}$.