

## EJERCICIOS DE RADICALES.

1.  $\sqrt{\frac{a^2}{mn^2} + \frac{a^2}{m^2n}}$

2.  $\sqrt{4a^2cd + 8abcd + 4b^2cd}$

3.  $\sqrt{6a^2b^4c^3 : \frac{2ab^3c^3}{9a^5b^8c^6}}$

4.  $\sqrt{\left(\frac{1}{x^2(a-x)} - \frac{1}{a^2(a-x)}\right)(a+x)}$

5.  $3\sqrt{ab} + \sqrt{4a^3b} - 2\sqrt{0,25ab} - a\sqrt{ab} - 4\sqrt{\frac{1}{4}ab}$

6.  $5\sqrt[6]{64a^2} - 5\sqrt[3]{27a} + 6\sqrt[9]{a^3}$

7.  $2\sqrt[3]{a^6b} - 3a^2\sqrt[3]{64b} + 5a\sqrt[3]{a^3b} + a^2\sqrt[3]{125b}$

8.  $b\sqrt{a^2c} + \sqrt[4]{16a^6b^4c^2} - a\sqrt[6]{b^6c^3}$

9.  $\sqrt{98a^2b^4c^2} + \sqrt[3]{250a^6b^9c^3} - \sqrt[4]{32a^8b^{12}c^4} + \sqrt{128a^6b^2c^4}$

10.  $\sqrt{\frac{a^3mn}{ab^2n^2}} + \sqrt{\frac{ab^7m^2}{a^3b^5mn}}$

11.  $(a-b)\sqrt[3]{(a+b)^4} - (a^2+b^2)\sqrt{a-b} + (a^2+b^2)\sqrt[3]{a+b} + (a+b)^2\sqrt{a-b}$

12.  $\frac{1}{a}\sqrt{\frac{ab^2}{4}} + 3b\sqrt{\frac{1}{4a}} - \frac{1}{a}\sqrt{ab^2}$

$$13. \sqrt[3]{8a^3 + 8a^4} + 1,5\sqrt[3]{27 + 27a} - \sqrt[3]{0,125(1+a)}$$

$$14. \sqrt{a^2m - a^2n} + \sqrt[4]{(m-n)^2b^4} + \sqrt[6]{(m-n)^3c^6}$$

$$15. \frac{b}{0,3} \sqrt{\frac{0,18a}{b^2}} + \frac{a}{b} \sqrt{\frac{18b^2}{a}} + 2c \sqrt{\frac{2a}{c^2}} - \frac{2}{ac^2} \sqrt{a^3c^4}$$

$$16. \sqrt{8ab} + \sqrt{72ab} + \sqrt{50ab} - \sqrt{288ab}$$

$$17. \frac{cd}{a} \sqrt{\frac{a^6}{cd}} - \frac{b^2d}{a} \sqrt{\frac{4a^4c}{b^2d}} + \frac{d^2}{c} \sqrt{\frac{b^4c^3}{d^3}}$$

$$18. (2a+3b)\sqrt{8a} + (a+2b-c)\sqrt{18a} - (4a-b-3c)\sqrt{2a}$$

$$19. \sqrt{ab} \cdot \sqrt[3]{a^2b^2} \cdot \sqrt[4]{ab^3}$$

$$20. (3 + \sqrt{a})(3 - \sqrt{a})$$

$$21. \sqrt[4]{a^2} \sqrt[6]{ab^4} \sqrt{ab} \sqrt[5]{b^2} \sqrt[10]{a^7b^9}$$

$$22. a\sqrt{2} \cdot 2\sqrt{a} \cdot a^3\sqrt{2} \cdot 2^3\sqrt{a} \cdot a^6\sqrt{2} \cdot 2^6\sqrt{a}$$

$$23. (a+b+\sqrt{a^2+b^2})(a+b-\sqrt{a^2+b^2})$$

$$24. \frac{4}{5} \sqrt{\frac{6m^3}{2n}} \cdot \frac{1}{2} \sqrt{\frac{3n^3}{8m}} \cdot \frac{5}{6} \sqrt{\frac{2m^4n^3}{4m^3n}}$$

$$25. \frac{\sqrt{a}}{\sqrt{a} + \sqrt{b}} + \frac{\sqrt{b}}{\sqrt{a} - \sqrt{b}}$$

$$26. \sqrt{2a+5-\sqrt{4a^2-8}} \cdot \sqrt{2a+5+2\sqrt{a^2-2}}$$

$$27. \frac{\sqrt{a+b}}{\sqrt{a+b}-\sqrt{a-b}}$$

$$28. \sqrt[3]{\frac{ab^2}{c^2d}} \cdot \sqrt[5]{\frac{a^4c^4}{b^3d^2}} \cdot \sqrt[6]{\frac{b^5d^2}{a^2d^2}} \cdot \sqrt[10]{\frac{c^2d^6}{a^4b^8}}$$

$$29. \frac{\sqrt{a}}{2-\sqrt{a}}$$

$$30. \frac{\sqrt{x} + \sqrt{y}}{\sqrt{x} - \sqrt{y}}$$

$$31. \frac{1}{1+\sqrt{2}+\sqrt{a}}$$

$$32. \frac{\sqrt[4]{a} \cdot \sqrt[8]{a}}{\sqrt[6]{a} \cdot \sqrt[9]{a}} \cdot \sqrt{a}$$

$$33. \frac{\sqrt{a}}{\sqrt{b}} + \frac{\sqrt{b}}{\sqrt{a}} - \sqrt{ab} + \frac{1}{\sqrt{ab}}$$

$$34. \frac{\sqrt{\frac{ab}{c}} \cdot \sqrt[3]{\frac{a^2b}{c^2}} \cdot \sqrt[4]{\frac{a^3c}{b}}}{\sqrt[6]{\frac{ac^5}{b^4}} \cdot \sqrt[4]{\frac{bc}{a}} \cdot \sqrt{\frac{b}{c}}} : \sqrt[3]{\frac{a^2 \cdot b^2}{b \cdot c}}$$

$$35. \frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}} + \frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}}$$

$$36. \frac{1}{\sqrt[4]{a} + \sqrt[4]{b}}$$

$$37. \frac{1}{\sqrt{m} - \sqrt[4]{n}}$$

$$38. \left( \left( \frac{a - \sqrt{b}}{\sqrt{a} - \sqrt[4]{b}} - \sqrt{a} \right) : \sqrt{b} - \frac{a}{\sqrt{b}} \right) \cdot b$$

$$39. \frac{bc}{\sqrt{a} \cdot \sqrt[4]{b} \cdot \sqrt[8]{c}}$$

$$40. \left( 3\sqrt[4]{4a^2b^3} \cdot \sqrt{2ab} \right)^3$$

$$41. \left( \sqrt{2a} \cdot \sqrt[3]{2a^2b^2} \right)^5$$

$$42. \left( (a+b)\sqrt[5]{a^4b^3} (a-b)\sqrt[3]{a^2b} \right)^2$$

$$43. \left( a^2 \sqrt{2} \cdot 2\sqrt[3]{bc^2} \right)^4$$

$$44. \left( \frac{\sqrt[5]{a^4b^3}}{c} \cdot \frac{a}{\sqrt[4]{b^2c^3}} \cdot \frac{5\sqrt{a}}{b} \right)^2$$

$$45. \left( \left( \frac{\sqrt{a}}{\sqrt[3]{b^2c}} \right)^2 : \left( \frac{2\sqrt{a}}{\sqrt[5]{b^4c^3}} \right)^3 \right)^2$$

$$46. \sqrt[3]{m^2n} \left( \sqrt[4]{m^3n^2} \left( \sqrt{m} \sqrt[3]{n} \right)^2 \sqrt[6]{m^5n^4} \right)^2$$

$$47. \frac{\sqrt{a}\sqrt{b} - \sqrt{b}\sqrt{a}}{\sqrt{\sqrt{a}}}$$

$$48. \sqrt[m-1]{\frac{ab}{\sqrt[m]{ab}}}$$

$$49. \left( \sqrt{2ab} \right)^3 \cdot \left( \sqrt{ab} \right)^5$$

$$50. \sqrt{\frac{1}{2}} \sqrt{\frac{1}{3}} \sqrt{a}$$

$$51. \left( \sqrt[3]{\sqrt[7]{\sqrt{a^2b^3}}} \right)^8$$

$$52. \left( \sqrt[4]{\left( \sqrt[3]{\left( \sqrt{ab} \right)^5} \right)^6} \right)^2$$

$$53. \sqrt{abc} \sqrt[4]{a^3b^3c^2} \cdot \sqrt[3]{a^5b^5}$$

$$54. \sqrt[3]{a^4 b^6 \sqrt{a^3 b^2}}$$

$$55. \left( \sqrt{(1+x)} \sqrt[6]{(1+x)^2} \right)^3$$

$$56. \sqrt{m^3 \sqrt{m^2} \sqrt[6]{m^5}}$$

$$57. \sqrt[3]{a^3 \sqrt{2a} \sqrt[3]{2a}}$$

$$58. \left( \sqrt{\left( \frac{\sqrt{m}}{\sqrt[4]{n}} \right)^2 \cdot \sqrt[5]{\frac{m^4}{\sqrt{n}}}} \right)^3$$

$$59. \sqrt[3]{a^2 b^5} \sqrt[4]{a^3 b^7} \sqrt{a^5 b^5} \sqrt[5]{a^7 b^3}$$

$$60. \sqrt[3]{ab \sqrt{ab}} \cdot \sqrt[3]{a^2 b^2} \cdot \sqrt{a \sqrt{a}} \cdot \frac{a}{\sqrt{a}}$$

$$61. \left( \sqrt{\frac{\sqrt{a}}{\sqrt{b}}} + \sqrt{\frac{\sqrt{c}}{\sqrt{d}}} \right)^2$$

$$62. \frac{\sqrt[3]{a^{\frac{5}{7}}} \cdot \sqrt{a}}{\sqrt[5]{a^{\frac{2}{3}}} \cdot \sqrt[4]{a^{\frac{2}{5}}}}$$

$$63. \left( \sqrt[3]{\frac{\sqrt{a^{-2} b^3}}{\sqrt[5]{a^{\frac{4}{5}} b^{\frac{2}{3}}}}} \right)^{-\frac{1}{4}}$$

$$64. \frac{\sqrt[4]{\left( a^{\frac{2}{5}} b^{\frac{3}{4}} \right)^{\frac{1}{6}}}}{\sqrt[4]{\left( a^{\frac{1}{5}} b^{\frac{1}{2}} \right)^{\frac{1}{3}}}}$$

$$65. \frac{\left( \frac{a^{-1}}{b^{-2}} \right)^{-\frac{1}{2}} \cdot \left( \frac{a^{-\frac{1}{4}}}{b^{-\frac{2}{5}}} \right)^{-\frac{3}{4}}}{\left( \frac{a^2}{b^{-2}} \right)^{-\frac{3}{2}}}$$