

Esercizi sulla somma algebrica di radicali

1. Calcolare le seguenti somme algebriche di radicali.

1.1. $2\sqrt{2} + 4\sqrt{2} =$

1.2. $-4\sqrt{3} + 6\sqrt{3} =$

1.3. $3\sqrt{5} - 8\sqrt{5} =$

1.4. $-5\sqrt{6} - 9\sqrt{6} =$

1.5. $\frac{1}{2}\sqrt{2} - 2\sqrt{2} =$

1.6. $-\frac{1}{3}\sqrt{5} + \sqrt{5} =$

1.7. $+3\sqrt{3} - \frac{4}{5}\sqrt{3} =$

1.8. $-\frac{2}{9}\sqrt{11} + \frac{4}{18}\sqrt{11} =$

1.9. $-\frac{3}{2}\sqrt{7} + \frac{6}{7}\sqrt{7} =$

1.10. $+4\sqrt{7} - 8\sqrt{7} + 9\sqrt{7} =$

1.11. $9\sqrt{11} - 12\sqrt{11} + 8\sqrt{11} =$

1.12. $-5\sqrt{2} - 12\sqrt{2} - 3\sqrt{2} =$

1.13. $+9\sqrt{13} + 11\sqrt{13} + 13\sqrt{13} =$

1.14. $\sqrt[3]{2} + 3\sqrt[3]{2} - 5\sqrt[3]{2} =$

1.15. $3\sqrt[3]{3} - 4\sqrt[3]{3} - \sqrt[3]{3} + 2\sqrt[3]{3} =$

1.16. $-5\sqrt[5]{5} - 4\sqrt[5]{5} + 12\sqrt[5]{5} =$

1.17. $+13\sqrt[4]{6} - 14\sqrt[4]{6} - 11\sqrt[4]{6} + 12\sqrt[4]{6} =$

1.18. $-15\sqrt[5]{15} - 14\sqrt[5]{15} + 10\sqrt[5]{15} - 12\sqrt[5]{15} =$

1.19. $+25\sqrt[7]{2} - 34\sqrt[7]{2} + 19\sqrt[7]{2} - 24\sqrt[7]{2} + 16\sqrt[7]{2} =$

1.20. $-13\sqrt[9]{11} + 22\sqrt[9]{11} + 15\sqrt[9]{11} - 42\sqrt[9]{11} + 10\sqrt[9]{11} =$

1.21. $\frac{1}{2}\sqrt{a} - 2\sqrt{a} =$

1.22. $-\frac{2}{3}\sqrt{ab} + 3\sqrt{ab} =$

1.23. $\frac{3}{5}\sqrt{x^3} - \frac{2}{3}\sqrt{x^3} =$

1.24. $-\frac{1}{6}\sqrt{x^2y} + \frac{3}{4}\sqrt{x^2y} - \frac{1}{2}\sqrt{x^2y} =$

1.25. $-3\sqrt{ay^5} + \frac{2}{3}\sqrt{ay^5} + \frac{3}{4}\sqrt{ay^5} + 2\sqrt{ay^5} =$

$$1.26. \quad -2\sqrt{2} + 4 - 3\sqrt{2} - 2\sqrt{4} =$$

$$1.27. \quad 3\sqrt{5} - 2\sqrt{9} - 3 + 4\sqrt{5} =$$

$$1.28. \quad -8\sqrt{7} - 9\sqrt{7} - 2\sqrt{25} + 5 =$$

$$1.29. \quad +12\sqrt{3} - 2\sqrt{9} - 9\sqrt{3} + 6 - 3\sqrt{9} =$$

$$1.30. \quad 21\sqrt{6} - 12\sqrt{5} - 8\sqrt{4} - 13\sqrt{6} + 11\sqrt{5} =$$

$$1.31. \quad -2\sqrt{18} - 4\sqrt{18} =$$

$$1.32. \quad +5\sqrt{12} - 7\sqrt{12} =$$

$$1.33. \quad -5\sqrt{8} - 10\sqrt{8} + 12\sqrt{8} =$$

$$1.34. \quad -\sqrt{50} + 3\sqrt{50} - 2\sqrt{50} =$$

$$1.35. \quad +3\sqrt{20} - 9\sqrt{20} + 12\sqrt{20} + 6\sqrt{20} =$$

$$1.36. \quad 3\sqrt{3} + 2\sqrt{2} - 5\sqrt{3} - 6\sqrt{2} =$$

$$1.37. \quad -4\sqrt{5} - 5\sqrt{7} + 8\sqrt{7} - 3\sqrt{7} =$$

$$1.38. \quad +5\sqrt{2} - 6\sqrt{3} + 2\sqrt{2} - 4\sqrt{3} =$$

$$1.39. \quad -7\sqrt{5} + 8\sqrt{7} - 8\sqrt{5} - 3\sqrt{5} =$$

$$1.40. \quad -6\sqrt{8} + 2\sqrt{11} - 9\sqrt{11} - 4\sqrt{8} =$$

$$1.41. \quad +4\sqrt{2} - 6\sqrt{3} + 2\sqrt{5} + 4\sqrt{3} - 6\sqrt{5} - 4\sqrt{2} =$$

$$1.42. \quad -5\sqrt{6} - 12\sqrt{2} + 12\sqrt{7} - 14\sqrt{7} - 9\sqrt{2} + 5\sqrt{6} =$$

$$1.43. \quad 9\sqrt{10} - 9\sqrt{13} + 13\sqrt{2} - 4\sqrt{13} - 2\sqrt{13} + 11\sqrt{2} =$$

$$1.44. \quad -6\sqrt{7} + 17\sqrt{5} - 12\sqrt{14} + 14\sqrt{5} - 23\sqrt{5} + 6\sqrt{7} + 12\sqrt{14} =$$

$$1.45. \quad 12\sqrt{29} + 32\sqrt{35} + 22\sqrt{11} - 29\sqrt{11} - 23\sqrt{35} + 7\sqrt{11} - 12\sqrt{29} =$$

$$1.46. \quad 2(\sqrt{2} - \sqrt{3}) - 3\sqrt{2} + 2\sqrt{3} =$$

$$1.47. \quad +7\sqrt{5} - 4(\sqrt{5} - \sqrt{6}) + 4\sqrt{6} =$$

$$1.48. \quad -9\sqrt{6} + 8\sqrt{11} + 3(\sqrt{6} - 2\sqrt{11}) =$$

$$1.49. \quad -4(3\sqrt{13} - 2\sqrt{17}) + 11\sqrt{13} + 17\sqrt{17} + \sqrt{13} =$$

$$1.50. \quad -5(3\sqrt{15} - 4\sqrt{3} - 2\sqrt{5}) - 4(2\sqrt{5} + 5\sqrt{3}) + 14\sqrt{15} =$$

$$1.51. -2[\sqrt{5} - 4(\sqrt{5} - 2\sqrt{6})] - 2\sqrt{6} =$$

$$1.52. 10\sqrt{2} + 2[\sqrt{6} + 2(\sqrt{2} - \sqrt{6})] + 8\sqrt{2} =$$

$$1.53. -4\sqrt{3} + 10\sqrt{2} - 3[+2(\sqrt{2} - \sqrt{3}) + 4\sqrt{3}] =$$

$$1.54. +5\sqrt{7} + 6\sqrt{5} + 7\sqrt{6} + [-5(2\sqrt{7} - 3\sqrt{5} + \sqrt{6})] =$$

$$1.55. [2\sqrt{3} - 3(2\sqrt{2} - 2\sqrt{3})] - 4\sqrt{2} - [3\sqrt{3} - (2\sqrt{3} - 5\sqrt{2})] - 4\sqrt{3} =$$

$$1.56. \{\sqrt{7} - [+2(\sqrt{3} - \sqrt{7}) + 4\sqrt{3}]\} - 3\sqrt{7} =$$

$$1.57. +2\sqrt{5} + \{+3\sqrt{6} - [-4(\sqrt{5} - \sqrt{6}) + 4\sqrt{6}] + 7\sqrt{5}\} =$$

$$1.58. +3(\sqrt{3} - 2\sqrt{11}) + \{+\sqrt{3} - [-5(\sqrt{11} - \sqrt{3}) - 6\sqrt{3}] + 2\sqrt{11}\} =$$

$$1.59. \{+2\sqrt{3} + 4\sqrt{2} + 2[-2(\sqrt{3} - \sqrt{2}) + 4(\sqrt{2} - 2\sqrt{3})] + 8\sqrt{2}\} + \sqrt{2} =$$

$$1.60. -2\{+2(\sqrt{5} - \sqrt{3} - \sqrt{2}) + 3\sqrt{3} - [-(\sqrt{2} - \sqrt{3}) - 2(\sqrt{3} - 2\sqrt{5})]\} - 4\sqrt{2} + 3\sqrt{5} =$$

2. Calcolare le seguenti somme algebriche di radicali.

$$2.1. +4\sqrt{18} - 8\sqrt{50} =$$

$$2.2. -9\sqrt{32} - 10\sqrt{72} =$$

$$2.3. -2\sqrt{54} + 7\sqrt{24} =$$

$$2.4. -6\sqrt{12} + 12\sqrt{27} =$$

$$2.5. -\sqrt{44} + 2\sqrt{99} =$$

$$2.6. +12\sqrt{27} - 27\sqrt{48} =$$

$$2.7. +5\sqrt{20} + 2\sqrt{80} - 9\sqrt{45} =$$

$$2.8. -14\sqrt{48} + 23\sqrt{12} - 13\sqrt{75} =$$

$$2.9. -9\sqrt{28} + \sqrt{112} - 18\sqrt{63} =$$

$$2.10. +5\sqrt{52} + 2\sqrt{208} - 2\sqrt{117} =$$

$$2.11. +4\sqrt{32} + 7\sqrt{75} - 8\sqrt{72} - 2\sqrt{48} =$$

$$2.12. -9\sqrt{18} - 7\sqrt{20} + 5\sqrt{32} - 2\sqrt{125} =$$

$$2.13. -3\sqrt{18} - 6\sqrt{24} + 12\sqrt{32} - 5\sqrt{54} =$$

$$2.14. -4\sqrt{20} + 3\sqrt{12} - 6\sqrt{80} + \sqrt{27} - 8\sqrt{45} =$$

$$2.15. -2\sqrt{12} + 8\sqrt{20} - 3\sqrt{18} - \sqrt{50} + 11\sqrt{80} + 2\sqrt{27} =$$

3. Determinare il valore del termine incognito, in modo tale che il risultato sia corretto.

3.1. $4\sqrt{5} + x = 9\sqrt{5}$ $x = \underline{\hspace{2cm}}$

3.2. $x + 9\sqrt{3} = +16\sqrt{3}$ $x = \underline{\hspace{2cm}}$

3.3. $-3\sqrt{2} + x = -6\sqrt{2}$ $x = \underline{\hspace{2cm}}$

3.4. $x - 9\sqrt{6} = -12\sqrt{6}$ $x = \underline{\hspace{2cm}}$

3.5. $x + 8\sqrt{11} = -7\sqrt{11}$ $x = \underline{\hspace{2cm}}$

3.6. $-12\sqrt{7} + x = +7\sqrt{7}$ $x = \underline{\hspace{2cm}}$

3.7. $+3\sqrt{2} + x + 6\sqrt{2} = +15\sqrt{2}$ $x = \underline{\hspace{2cm}}$

3.8. $-5\sqrt{3} + 11\sqrt{3} + x = \sqrt{3}$ $x = \underline{\hspace{2cm}}$

3.9. $x - 10\sqrt{5} - 5\sqrt{5} = -7\sqrt{5}$ $x = \underline{\hspace{2cm}}$

3.10. $-8\sqrt{13} + 18\sqrt{13} + x = +6\sqrt{13}$ $x = \underline{\hspace{2cm}}$

3.11. $-15\sqrt{11} + x - 8\sqrt{11} = +13\sqrt{11}$ $x = \underline{\hspace{2cm}}$

3.12. $+4\sqrt{14} - 9\sqrt{14} + x + 7\sqrt{14} = -9\sqrt{14}$ $x = \underline{\hspace{2cm}}$

3.13. $-7\sqrt{3} + 12\sqrt{3} + 8\sqrt{3} + x - 2\sqrt{3} = -5\sqrt{3}$ $x = \underline{\hspace{2cm}}$

3.14. $-10\sqrt{5} + 2\sqrt{5} - 6\sqrt{5} + x - 9\sqrt{5} + 4\sqrt{5} = \sqrt{5}$ $x = \underline{\hspace{2cm}}$

3.15. $+4\sqrt{17} - 5\sqrt{17} + x + 2\sqrt{17} - \sqrt{17} + 11\sqrt{17} = -6\sqrt{17}$ $x = \underline{\hspace{2cm}}$

3.16. $4\sqrt{13} - 6\sqrt{5} + x\sqrt{13} + y\sqrt{5} = 0$ $x = \underline{\hspace{2cm}} y = \underline{\hspace{2cm}}$

3.17. $3\sqrt{2} + x\sqrt{2} + 3\sqrt{3} + y\sqrt{3} = 5\sqrt{2} + 8\sqrt{3}$ $x = \underline{\hspace{2cm}} y = \underline{\hspace{2cm}}$

3.18. $-8\sqrt{5} + 5\sqrt{7} + x\sqrt{5} + y\sqrt{7} = -\sqrt{5} + 3\sqrt{7}$ $x = \underline{\hspace{2cm}} y = \underline{\hspace{2cm}}$

3.19. $-3\sqrt{2} + 8\sqrt{11} + y\sqrt{11} + x\sqrt{2} = -4\sqrt{2}$ $x = \underline{\hspace{2cm}} y = \underline{\hspace{2cm}}$

3.20. $-6\sqrt{5} + 5\sqrt{13} + 7\sqrt{13} + y\sqrt{13} - x\sqrt{5} = -7\sqrt{5} + 2\sqrt{13}$ $x = \underline{\hspace{2cm}} y = \underline{\hspace{2cm}}$