

Calcolo in radicali

Calcolati:

$$A = 2 \cdot \sqrt{216} + 2\sqrt{3} \cdot (\sqrt{48} - 2\sqrt{18}) - 2\sqrt{2} \cdot (\sqrt{32} - \sqrt{12})$$

$$A = 2 \cdot 2 \cdot 3 \cdot \sqrt{6} + 2\sqrt{3} \cdot (4\sqrt{3} - 2 \cdot 3\sqrt{2}) - 2\sqrt{2} \cdot (4\sqrt{2} - 2\sqrt{3})$$

$$A = 12\sqrt{6} + 2\sqrt{3} \cdot (4\sqrt{3} - 6\sqrt{2}) - 2\sqrt{2} \cdot (4\sqrt{2} - 2\sqrt{3})$$

$$A = \underline{12\sqrt{6}} + \underline{8 \cdot 3} - \underline{12\sqrt{6}} - \underline{8 \cdot 2} + \underline{4 \cdot \sqrt{6}} = 4\sqrt{6} + 24 - 16$$

$$A = 4\sqrt{6} + 8$$

$$B = 2\sqrt{150} + 2\sqrt{3} \cdot (3\sqrt{12} - \sqrt{50}) - \sqrt{2} \cdot (\sqrt{18} - \sqrt{48})$$

$$B = 2 \cdot 5 \cdot \sqrt{6} + 2\sqrt{3} \cdot (3 \cdot 2\sqrt{3} - 5\sqrt{2}) - \sqrt{2} \cdot (3\sqrt{2} - 4\sqrt{3})$$

$$B = 10\sqrt{6} + 2\sqrt{3} \cdot (6\sqrt{3} - 5\sqrt{2}) - \sqrt{2} \cdot (3\sqrt{2} - 4\sqrt{3})$$

$$B = \underline{10\sqrt{6}} + \underline{12 \cdot 3} - \underline{10\sqrt{6}} - \underline{3 \cdot 2} + \underline{4\sqrt{6}} = 26 - 6 + 4\sqrt{6} = 20 + 4\sqrt{6}$$

$$C = 2\sqrt{6} + 3\sqrt{3} \cdot [8\sqrt{3} - 2 \cdot (4\sqrt{3} - 2\sqrt{2})]$$

$$C = 2\sqrt{6} + 3 \cdot \sqrt{3} \cdot (8\sqrt{3} - 2\sqrt{3} + 4\sqrt{2}) = 2\sqrt{6} + 3\sqrt{3} \cdot 4\sqrt{2} = 2\sqrt{6} + 12\sqrt{6} = 14\sqrt{6}$$

$$D = 50 + 2\sqrt{5} \cdot [65\sqrt{2} - 5 \cdot (13\sqrt{2} - 3\sqrt{5})]$$

$$D = 50 + 2\sqrt{5} \cdot (65\sqrt{2} - 65\sqrt{2} + 15\sqrt{5}) = 50 + 2\sqrt{5} \cdot 15\sqrt{5} = 50 + 30 \cdot 5 = 50 + 150 = 200$$

$$E = 12\sqrt{3} + 2 \cdot \{ 20\sqrt{2} - 2 \cdot [18\sqrt{3} - 5 \cdot (3\sqrt{3} - 2\sqrt{2})] \}$$

$$E = 12\sqrt{3} + 2 \cdot [20\sqrt{2} - 2 \cdot (18\sqrt{3} - 15\sqrt{3} + 10\sqrt{2})] = 12\sqrt{3} + 2 \cdot [20\sqrt{2} - 2 \cdot (3\sqrt{3} + 10\sqrt{2})]$$

$$E = 12\sqrt{3} + 2 \cdot (20\sqrt{2} - 6\sqrt{3} - 20\sqrt{2}) = 12\sqrt{3} + 2 \cdot (-6\sqrt{3}) = 12\sqrt{3} - 12\sqrt{3} = 0$$

$$F = 15\sqrt{7} + 3 \cdot \{ -41\sqrt{3} + 5 \cdot [2\sqrt{7} + 3 \cdot (3\sqrt{3} - \sqrt{7})] \}$$

$$F = 15\sqrt{7} + 3 \cdot [-41\sqrt{3} + 5 \cdot (2\sqrt{7} + 9\sqrt{3} - 3\sqrt{7})]$$

$$F = 15\sqrt{7} + 3 \cdot [-41\sqrt{3} + 5 \cdot (-\sqrt{7} + 9\sqrt{3})] = 15\sqrt{7} + 3 \cdot (-41\sqrt{3} - 5\sqrt{7} + 45\sqrt{3})$$

$$F = 15\sqrt{7} + 3 \cdot (4\sqrt{3} - 5\sqrt{7}) = 15\sqrt{7} + 12\sqrt{3} - 15\sqrt{7} = 12\sqrt{3}$$

$$\begin{array}{l} 216 \sqrt{2^2} \rightarrow 2 \\ 54 \sqrt{2} \\ 27 \sqrt{3^2} \rightarrow 3 \\ 3 \sqrt{3} \\ 1 \end{array} \quad \begin{array}{l} 48 \sqrt{2^2} \rightarrow 2 \\ 12 \sqrt{2^2} \rightarrow 2 \\ 3 \sqrt{1} \end{array} \quad \begin{array}{l} 18 \sqrt{2} \\ 9 \sqrt{3^2} \rightarrow 3 \\ 1 \end{array}$$

$$\begin{array}{l} 32 \sqrt{2^2} \rightarrow 2 \\ 8 \sqrt{2^2} \rightarrow 2 \\ 2 \sqrt{2} \\ 1 \end{array} \quad \begin{array}{l} 12 \sqrt{2^2} \\ 3 \sqrt{3} \\ 1 \end{array}$$

$$2\sqrt{3} \cdot 4\sqrt{3} = 2 \cdot 4 \cdot \sqrt{3} \cdot \sqrt{3} = 8 \cdot \sqrt{3^2} = 8 \cdot 3 = 24$$

In general, $a \geq 0 \Rightarrow \sqrt{a} \cdot \sqrt{a} = a$

Ex: $\sqrt{2} \cdot \sqrt{2} = 2$

$$\begin{array}{l} 150 \sqrt{2 \cdot 5} > 5 \\ 15 \sqrt{5} \\ 3 \sqrt{3} \\ 1 \end{array} \quad \begin{array}{l} 50 \sqrt{5^2} \rightarrow 1 \\ 2 \sqrt{2} \\ 1 \end{array}$$

$$\rightarrow \sqrt{15} - 3 \cdot (\sqrt{15} + 2) + 4 \cdot (1 - \sqrt{15}) = \underline{5\sqrt{15}} - \underline{3\sqrt{15}} - 6 + 4 - \underline{4\sqrt{15}} = -2\sqrt{15} - 2$$

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