

ALUMNO/A: _____ N°: _____

FECHA: _____ GRUPO: _____

1) $3\sqrt{2} + 5\sqrt{2} - 7\sqrt{2} + 4\sqrt{2} =$

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

3) $3\sqrt{2} - 4\sqrt{8} + 5\sqrt{50} - 3\sqrt{32} =$

4) $2\sqrt{2} - 3\sqrt{3} + 5\sqrt{3} - 4\sqrt{3} =$

5) $2\sqrt{5} + 7\sqrt{5} - 3\sqrt{5} + 8\sqrt{5} =$

6) $4\sqrt{12} - 3\sqrt{75} + 6\sqrt{300} - \sqrt{108} =$

7) $2\sqrt{20} + 4\sqrt{80} - 5\sqrt{180} + 6\sqrt{5} =$

8) $\frac{1}{4}\sqrt{128} + 6\sqrt{512} - \frac{1}{2}\sqrt{32} =$

9) $\frac{4}{3}\sqrt{27} - \frac{1}{2}\sqrt{243} - \sqrt{75} - 2\sqrt{48} =$

10) $2\sqrt{45} - 3\sqrt{80} - \sqrt{500} =$

11) $2\sqrt[3]{16} - 4\sqrt[3]{54} + \sqrt[3]{128} =$

12) $2\sqrt{20} - \frac{1}{2}\sqrt{3} + 6\sqrt{5} =$

13) $2\sqrt[3]{2} + \sqrt[3]{3} =$

14) $2\sqrt[3]{2} \cdot \sqrt[3]{3} =$

15) $\sqrt{3} \cdot \sqrt{5} \cdot \sqrt{7} =$

16) $(4\sqrt{3}) \cdot (-\sqrt{5}) =$

17) $\sqrt{a} \cdot \sqrt{a} \cdot \sqrt{a \cdot b} =$

18) $\frac{5}{4} \cdot \frac{\sqrt{3}}{\sqrt{2}} \cdot 6 =$

19) $\frac{\sqrt{3 \cdot 7^2}}{\sqrt{6}} =$

$$1) 3\sqrt{2} + 5\sqrt{2} - 7\sqrt{2} + 4\sqrt{2} = \boxed{5\sqrt{2}}$$

$$2) \frac{6\sqrt{2}}{2} - \frac{2\sqrt{2}}{2} + \frac{4\sqrt{2}}{2} - 5\sqrt{3} = \boxed{8\sqrt{2} - 5\sqrt{3}}$$

$$3) 3\sqrt{2} - 4\sqrt{8} + 5\sqrt{50} - 3\sqrt{32} = \\ 3\sqrt{2} - 4\sqrt{2^3} + 5\sqrt{5 \cdot 2} - 3\sqrt{2^5} = \\ 3\sqrt{2} - 8\sqrt{2} + 10\sqrt{2} - 12\sqrt{2} = \\ + 28\sqrt{2} - 20\sqrt{2} = \boxed{8\sqrt{2}}$$

$$4) 2\sqrt{2} - 3\sqrt{3} + 5\sqrt{3} - 4\sqrt{3} = \\ = \boxed{2\sqrt{2} - 2\sqrt{3}}$$

$$5) 2\sqrt{5} + 7\sqrt{5} - 3\sqrt{5} + 8\sqrt{5} = \boxed{14\sqrt{5}}$$

$$6) 4\sqrt{12} - 3\sqrt{75} + 6\sqrt{300} - \sqrt{108} = \\ 4\sqrt{2^2 \cdot 3} - 3\sqrt{5^2 \cdot 3} + 6\sqrt{2^2 \cdot 3 \cdot 5^2} - \sqrt{2^2 \cdot 3^3} = \\ 8\sqrt{3} - 15\sqrt{3} + 60\sqrt{3} - 6\sqrt{3} = \\ + 68\sqrt{3} - 21\sqrt{3} = \boxed{47\sqrt{3}}$$

$$7) 2\sqrt{20} + 4\sqrt{80} - 5\sqrt{180} + 6\sqrt{5} = \\ 2\sqrt{2^2 \cdot 5} + 4\sqrt{2^4 \cdot 5} - 5\sqrt{2^2 \cdot 3^2 \cdot 5} + 6\sqrt{5} = \\ 4\sqrt{5} + 16\sqrt{5} - 30\sqrt{5} + 6\sqrt{5} = \\ 26\sqrt{5} - 30\sqrt{5} = \boxed{-4\sqrt{5}}$$

$$8) \frac{1}{4}\sqrt{128} + 6\sqrt{512} - \frac{1}{2}\sqrt{32} = \\ \frac{1}{4}\sqrt{2^7} + 6\sqrt{2^9} - \frac{1}{2}\sqrt{2^5} = \\ \frac{1}{4} \cdot 2^{\frac{7}{2}} + 6 \cdot 2^{\frac{9}{2}} - \frac{1}{2} \cdot 2^{\frac{5}{2}} = \\ \frac{8}{4}\sqrt{2} + 6 \cdot 16\sqrt{2} - \frac{4}{2}\sqrt{2} = \\ 2\sqrt{2} + 96\sqrt{2} - 2\sqrt{2} = \boxed{96\sqrt{2}}$$

$$9) \frac{4}{3}\sqrt{27} - \frac{1}{2}\sqrt{243} - \sqrt{75} - 2\sqrt{48} =$$

$$\frac{4}{3}\sqrt{3^3} - \frac{1}{2}\sqrt{3^5} - \sqrt{3 \cdot 5^2} - 2\sqrt{2^4 \cdot 3}$$

$$\frac{4 \cdot 3}{3}\sqrt{3} - \frac{1}{2} \cdot 3^2\sqrt{3} - 5\sqrt{3} - 7 \cdot 2^2\sqrt{3} =$$

$$4\sqrt{3} - \frac{9}{2}\sqrt{3} - 5\sqrt{3} - 8\sqrt{3} = -9\sqrt{3} - \frac{9}{2}\sqrt{3} = \left(-9 - \frac{9}{2}\right)\sqrt{3} =$$

$$10) 2\sqrt{45} - 3\sqrt{80} - \sqrt{500} = -\frac{18-9}{2}\sqrt{3} = \boxed{-\frac{27}{2}\sqrt{3}}$$

$$2 \cdot \sqrt{3^2 \cdot 5} - 3\sqrt{2^4 \cdot 5} - \sqrt{5 \cdot 10^2} =$$

$$= 2 \cdot 3\sqrt{5} - 3 \cdot 2^2\sqrt{5} - 10\sqrt{5} =$$

$$= 6\sqrt{5} - 12\sqrt{5} - 10\sqrt{5} = \boxed{-16\sqrt{5}}$$

$$11) 2\sqrt[3]{16} - 4\sqrt[3]{54} + \sqrt[3]{128} =$$

$$2\sqrt[3]{2^4} - 4\sqrt[3]{2 \cdot 3^3} + \sqrt[3]{2^7} =$$

$$= 2 \cdot 2 \cdot \sqrt[3]{2} - 4 \cdot 3\sqrt[3]{2} + 2^2\sqrt[3]{2} = 4\sqrt[3]{2} - 12\sqrt[3]{2} + 4\sqrt[3]{2} = \\ = \boxed{-4\sqrt[3]{2}}$$

$$12) 2\sqrt{20} - \frac{1}{2}\sqrt{3} + 6\sqrt{5} =$$

$$2 \cdot \sqrt{2^2 \cdot 5} - \frac{1}{2}\sqrt{3} + 6\sqrt{5} = 4\sqrt{5} - \frac{1}{2}\sqrt{3} + 6\sqrt{5} =$$

$$\boxed{10\sqrt{5} - \frac{1}{2}\sqrt{3}}$$

$$13) 2\sqrt[3]{2} + \sqrt[3]{3} = \text{NO SE PUEDE SUMAR}$$

$$14) 2\sqrt[3]{2} \cdot \sqrt[3]{3} = 2 \cdot \sqrt[3]{2 \cdot 3} = \boxed{2\sqrt[3]{6}}$$

$$15) \sqrt{3} \cdot \sqrt{5} \cdot \sqrt{7} = \sqrt{3 \cdot 5 \cdot 7} = \boxed{\sqrt{105}}$$

$$16) (4\sqrt{3}) \cdot (-\sqrt{5}) = -4 \cdot \sqrt{3 \cdot 5} = \boxed{-4\sqrt{15}}$$

$$17) \sqrt{a} \cdot \sqrt{a} \cdot \sqrt{a \cdot b} = \sqrt{a \cdot a \cdot a \cdot b} = \sqrt{a^3 b} = \boxed{a\sqrt{ab}}$$

$$18) \frac{5}{4} \cdot \frac{\sqrt{3}}{\sqrt{2}} \cdot 6 = \frac{5 \cdot 6}{4} \cdot \sqrt{\frac{3}{2}} = \boxed{\frac{15}{2}\sqrt{\frac{3}{2}}}$$

$$19) \frac{\sqrt{3 \cdot 7^2}}{\sqrt{6}} = \sqrt{\frac{3 \cdot 7^2}{2 \cdot 3}} = \sqrt{\frac{7^2}{2}} = \boxed{7\sqrt{\frac{1}{2}}}$$