Aufgabe 13

a) Additionsmauer:

$$\sqrt{5} - 4\sqrt{5} = -3\sqrt{5}$$
$$\sqrt{5} + 6\sqrt{10} + 6\sqrt{10} + 4\sqrt{5} = 5\sqrt{5} + 12\sqrt{10}$$
$$6\sqrt{10} + 4\sqrt{5} + \sqrt{5} = 6\sqrt{10} + 5\sqrt{5}$$
$$5\sqrt{5} + 12\sqrt{10} + 6\sqrt{10} + 5\sqrt{5} = 10\sqrt{5} + 18\sqrt{10}$$

$$10\sqrt{5} + 18\sqrt{10}$$

$$\oplus \qquad 5\sqrt{5} + 12\sqrt{10} \qquad 6\sqrt{10} + 5\sqrt{5}$$

$$\oplus \qquad \sqrt{5} + 6\sqrt{10} \qquad 6\sqrt{10} + 4\sqrt{5} \qquad \sqrt{5}$$

$$\oplus \qquad \sqrt{5} \qquad 6\sqrt{10} \qquad 4\sqrt{5} \qquad -3\sqrt{5}$$

b) Multiplikationsmauer:

$$\sqrt{6} \cdot \sqrt{6} = \sqrt{6 \cdot 6} = \sqrt{36} = 6$$
$$\sqrt{6} \cdot \sqrt{2} = \sqrt{6 \cdot 2} = \sqrt{12} = \sqrt{4 \cdot 3} = 2\sqrt{3}$$
$$\sqrt{2} \cdot \sqrt{8} = \sqrt{2 \cdot 8} = \sqrt{16} = 4$$
$$6 \cdot 2\sqrt{3} = 12\sqrt{3}$$
$$2\sqrt{3} \cdot 4 = 8\sqrt{3}$$
$$12\sqrt{3} \cdot 8\sqrt{3} = 96\sqrt{3 \cdot 3} = 96\sqrt{9} = 96 \cdot 3 = 288$$

288

⊙ $12\sqrt{3}$ $8\sqrt{3}$

⊙ 6 $2\sqrt{3}$ 4

⊙ $\sqrt{6}$ $\sqrt{6}$ $\sqrt{2}$ $\sqrt{8}$