# OPERACIONES CON RADICALES

3º ESO

$$3\sqrt{8}+3\sqrt{2}=3\sqrt{2^3}+3\sqrt{2}=$$

$$3\cdot 2\sqrt{2}+3\sqrt{2}=6\sqrt{2}+3\sqrt{2}=$$

$$9\sqrt{2}$$

$$-3\sqrt{6}+3\sqrt{6}=0$$

$$-3\sqrt{20}-\sqrt{5}=-3\sqrt{2^2\cdot 5}-\sqrt{5}=$$

$$-3\cdot 2\sqrt{5}-\sqrt{5}=-6\sqrt{5}-\sqrt{5}=$$

$$-7\sqrt{5}$$

$$2\sqrt{45} - 2\sqrt{5} = 2\sqrt{3^2 \cdot 5} - 2\sqrt{5} =$$

$$2 \cdot 3\sqrt{5} - 2\sqrt{5} = \ 6\sqrt{5} - 2\sqrt{5} =$$

$$4\sqrt{5}$$

$$3\sqrt{18} - 2\sqrt{2} = 3\sqrt{3^2 \cdot 2} - 2\sqrt{2} =$$

$$3 \cdot 3\sqrt{2} - 2\sqrt{2} = 9\sqrt{2} - 2\sqrt{2} =$$

$$7\sqrt{2}$$

$$-3\sqrt{18}+3\sqrt{8}-\sqrt{24}=$$

$$-3\sqrt{2\cdot 3^2}+3\sqrt{2^3}-\sqrt{2^3\cdot 3}=$$

$$-3\cdot 3\sqrt{2}+3\cdot 2\sqrt{2}-2\sqrt{2\cdot 3}=$$

$$-9\sqrt{2}+6\sqrt{2}-2\sqrt{6}=$$

$$-3\sqrt{2}-2\sqrt{6}$$

$$3\sqrt{18}+3\sqrt{12}+2\sqrt{27}=$$

$$3\sqrt{2\cdot 3^2}+3\sqrt{2^2\cdot 3}+2\sqrt{3^3}=$$

$$3\cdot 3\sqrt{2}+3\cdot 2\sqrt{3}+2\cdot 3\sqrt{3}=$$

$$9\sqrt{2}+6\sqrt{3}+6\sqrt{3}=9\sqrt{2}+12\sqrt{3}$$

$$-3\sqrt{5}-\sqrt{6}-\sqrt{5}=$$

$$-4\sqrt{5}-\sqrt{6}$$

$$-3\sqrt{2}+3\sqrt{20}-3\sqrt{8}=$$

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

$$-3\sqrt{2}+3\cdot 2\sqrt{5}-3\cdot 2\sqrt{2}=$$

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

$$-9\sqrt{2}+6\sqrt{5}$$

$$-3\sqrt{3}-\sqrt{8}-3\sqrt{3}=$$

$$-6\sqrt{3}-\sqrt{2^3}=$$

$$-6\sqrt{3}-2\sqrt{2}$$

$$-2\sqrt{20}+2\sqrt{18}-2\sqrt{5}=$$

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

$$-2\cdot 2\sqrt{5}+2\cdot 3\sqrt{2}-2\sqrt{5}=$$

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

$$-6\sqrt{5}+6\sqrt{2}$$

$$2\sqrt{18} - 2\sqrt{12} + 2\sqrt{18} =$$

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

$$4 \cdot 3\sqrt{2} - 2 \cdot 2\sqrt{3} =$$

$$12\sqrt{2} - 4\sqrt{3}$$

$$-\sqrt{45}+2\sqrt{5}-\sqrt{20}-2\sqrt{6}=$$

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

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

$$-3\sqrt{5}-2\sqrt{6}$$

$$2\sqrt{20} - \sqrt{20} + 3\sqrt{20} - 2\sqrt{45} =$$

$$4\sqrt{20} - 2\sqrt{45} =$$

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

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

$$-3\sqrt{45}+2\sqrt{12}+3\sqrt{6}-3\sqrt{20}=$$

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

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

$$-9\sqrt{5}+4\sqrt{3}+3\sqrt{6}-6\sqrt{5}=$$

$$-15\sqrt{5}+4\sqrt{3}+3\sqrt{6}$$

$$-\sqrt{27} - 3\sqrt{45} - \sqrt{20} + 2\sqrt{45} =$$

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

$$-3\sqrt{3} - 3\sqrt{5} - 2\sqrt{5} =$$

$$-3\sqrt{3} - 5\sqrt{5}$$