

EJERCICIO MIBE 3310:

Efectúa y simplifica:

$$\begin{aligned} \text{a) } & \sqrt{6+\sqrt{27}} \cdot \sqrt{6-\sqrt{27}} = \\ & = \sqrt{(6+\sqrt{27}) \cdot (6-\sqrt{27})} = \\ & = \sqrt{6^2 - (\sqrt{27})^2} = \\ & = \sqrt{36-27} = \sqrt{9} = \boxed{3} \end{aligned}$$

$$\begin{aligned} \text{b) } & (2-\sqrt{5})(3+2\sqrt{5}) = \\ & = 2 \cdot 3 + 2 \cdot 2\sqrt{5} - \sqrt{5} \cdot 3 - \sqrt{5} \cdot 2\sqrt{5} = \\ & = 6 + 4\sqrt{5} - 3\sqrt{5} - 2 \cdot \sqrt{5} \cdot \sqrt{5} = \\ & = 6 + \sqrt{5} - 2 \cdot (\sqrt{5})^2 = \\ & = 6 + \sqrt{5} - 10 = \boxed{-4 + \sqrt{5}} \end{aligned}$$

$$\begin{aligned} \text{c) } & (\sqrt{2} + \sqrt{3})(\sqrt{6} - 1) = \\ & = \sqrt{2} \cdot \sqrt{6} - \sqrt{2} + \sqrt{3} \cdot \sqrt{6} - \sqrt{3} = \\ & = \sqrt{12} - \sqrt{2} + \sqrt{18} - \sqrt{3} = \\ & = 2\sqrt{3} - \sqrt{2} + 3\sqrt{2} - \sqrt{3} = \boxed{\sqrt{3} + 2\sqrt{2}} \end{aligned}$$