

EX 1.4.9

$$\begin{aligned} \text{d) } (\sqrt{3} + 1)^4 &= \left((\sqrt{3} + 1)^2 \right)^2 \\ &= (3 + 2\sqrt{3} + 1)^2 \\ &= (4 + 2\sqrt{3})^2 \\ &= 16 + 16\sqrt{3} + \underbrace{(2\sqrt{3})^2}_{4 \cdot 3} \\ &= 28 + 16\sqrt{3} \end{aligned}$$