

$$x^4 - 10x^2 + 1 = 0$$

$$D = 100 - 4 = 96$$

$$x^2 = \frac{10 \pm 4\sqrt{6}}{2} = 5 \pm 2\sqrt{6} = (\sqrt{3} \pm \sqrt{2})^2$$

$$x = \sqrt{3} \pm \sqrt{2} \Rightarrow \mathbb{Q}[x]/(x^4 - 10x^2 + 1) \cong \mathbb{Q}(\sqrt{2} + \sqrt{3})$$