

49)

$$\begin{aligned} a^3 + 13a^2 + 13a + 1 &= \\ &= (a^3 + 1) + 13a(a + 1) = \\ &= (a + 1)(a^2 - a + 1) + 13a(a + 1) = \\ &= (a + 1)(a^2 - a + 1 + 13a) = \\ &= (a + 1)(a^2 + 12a + 1) \end{aligned}$$

50)

$$\begin{aligned} b^4 - b^2 + b - 1 &= \\ &= b^2(b^2 - 1) + (b - 1) = \\ &= b^2(b + 1)(b - 1) + (b - 1) = \\ &= (b - 1)[b^2(b + 1) + 1] = \\ &= (b - 1)(b^3 + b^2 + 1) \end{aligned}$$

oppure:

$$\begin{aligned} b^4 - b^2 + b - 1 &= \\ &= (b^4 - 1) - b^2 + b = \\ &= (b^2 + 1)(b + 1)(b - 1) - b(b - 1) = \\ &= (b - 1)[(b^2 + 1)(b + 1) - b] = \\ &= (b - 1)(b^3 + b^2 + 1) = \\ &= (b - 1)(b^3 + b^2 + 1) \end{aligned}$$

51)

$$\begin{aligned} x^6 - 3x^5 + 3x^4 - x^3 - x^2 + 2x - 1 &= \\ &= x^3(x^3 - 3x^2 + 3x - 1) - (x^2 - 2x + 1) = \\ &= x^3(x - 1)^3 - (x - 1)^2 = \\ &= (x - 1)^2[x^3(x - 1) - 1] = \\ &= (x - 1)^2(x^4 - x^3 - 1) \end{aligned}$$