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Polyname wher even Korper
 Teile x^4 + 3x^2 + 4 durch 4x^2 + 2x + 1 in \mathbb{Z}_5 mit Rest.
 Nach Satz 5.25 homen wir das, weil
   a(x) = m(x) · q(x) + r(x)
             was our soden Rest 4x = 5 1 => x = 4
   -(4.4.x4 + 8x3+4x2)
 = -8x3 - x2 + 4
 = 2×3 + 4×2 + 4
                                     (un berechnen da a(x) - m(x).
 \frac{-(2x^3+6x^2+3x)}{-2x^2-3x+4}
= 3 \times^{2} + 2 \times + 4
- (3 \times^{2} + 4 \times + 2)
=-2\times+2
= 3× +2 - der Rest +(x)
 Berechne
                               (x+3)(x+2)
 in \mathbb{Z}_5[x]_{x^2+4}
  (x+3)(x+2) \equiv_{m(x)} x^{2} + 2x + 3x + 6 \equiv_{m(x)} x^{2} + 6 - (x^{2} + 4)
                                                =m (x) 2
x^2 + 4 in \mathbb{Z}_5
 a(1)=0, a(4)=0
 \Rightarrow x^{2} + 4 = (x-1)(x-4)
         = (x+4)(x+1)
x^3 + 2x^2 + 1 in \mathbb{Z}_3
 \alpha(0) = 1, \alpha(1) = 1 + 1 + 1 = 1, \alpha(2) = 8 + 2 \cdot 4 + 1 = 2 + 2 + 1 = 2
 x^4+x^2+1 in \mathbb{Z}_2
x + x + 1 in \mathbb{Z}_2

Hinweis: x^2 + x + 1 ist das einzige irreduzible Polynom in \mathbb{Z}_2 von
 \alpha(0) = 1, \quad \alpha(1) = 1
Wern with irreducibel, dann teelt \times^2 + \times +7 a(x). After a(X) = (\times^2 + \times +1) a(x) down muss deg (q(x)) = 2 yeller, also q(X) = \times^2 + \times +1
\frac{1+1=0}{=} \frac{4}{x^2+1}=a(x)
                            Falterisierung
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