

$$1) \mu_1 = \{ x \in \mathbb{Z} \mid x \bmod 3 = 0 \}$$

welt *Bedingung*

$$2) \mu_2 = \{ x \in \mathbb{Z} \mid x \bmod 4 = 0 \vee x \bmod 5 = 0 \}$$

$$3) \mu_3 = \{ x \in \mathbb{Z} \mid x \bmod 3 \neq 0 \}$$

$$4) \mu_4 = \{ x \in]4; 42[\mid \neg (x \bmod 3 = 0 \wedge x \bmod 2 = 0) \}$$

$x \bmod 3 \neq 0 \vee x \bmod 2 \neq 0$

$$5) \mu_5 = \{ x \in \mathbb{Z}^{>42} \mid x \bmod 7 = 0 \wedge x \bmod 3 \neq 0 \}$$

$$f(x) = (x+a)^2 + b \quad S(-a \quad | \quad b)$$

$$(3x-2)^2 = (3x-2)(3x-2)$$
$$9x^2 - 12x + 4$$

$$(2x-1)^3 = (2x-1)^2 \cdot (2x-1)$$

$$\boxed{2x} \boxed{+3}^5 = (2x+3)^2 (2x+3)^2 (2x+3)$$

$$1(2x)^5 3^0 + 5(2x)^4 3^1 + 10(2x)^3 3^2 + 10(2x)^2 3^3 + 5(2x)^1 3^4 + 1(2x)^0 3^5$$

$$32x^5 + 240x^4 + 370x^3 + 1080x^2 + 81x + 243$$

$$(2i - 1)^4$$

$$\sqrt{9} = 3$$

$$1(2i)^4 + 4(2i)^3(-1) + 6(2i)^2(-1)^2 + 4(2i)(-1)^3 + 1(-1)^4$$

$$16 + 32i - 24 - 8i + 1$$

$$-7 + 24i$$

$$\frac{5}{\sqrt{x^2-3}} \cdot \frac{\sqrt{x^2+3}}{\sqrt{x^2+3}} = \frac{5 \cdot (\sqrt{x^2+3})}{x^2-9}$$

\nearrow

$$\frac{2i-5}{3i+1} \cdot \frac{3i-1}{3i-1} = \frac{-6-15i-7i-5}{-9-1}$$

$$= \frac{-11-17i}{-10} = \frac{11}{10} + \frac{17}{10}i$$

$$\frac{5-2i}{4i+3} = (5-2i) : (4i+3) \cdot \frac{4i-3}{4i-3}$$

$$\frac{20i-15+8+6i}{-16-9} = \frac{-7+26i}{-25} = 0,28 - 1,04i$$

Polynomdivision

$$\begin{array}{r}
 1234567 : 7 = 17 \dots R2 \\
 \underline{-7} \\
 534567 \\
 \underline{-49}
 \end{array}$$

Rest

$\cdot R2$
 $\frac{\cdot R2}{7}$

$f(x) = x^3 - 7x^2 + 6 = 0$

linearfaktor

$$(x+a)(x+b)(x+c) = 0$$

$$\begin{array}{r}
 (x^3 - 7x^2 + 6) : (x - 1) = x^2 - 6x - 6 \\
 \underline{-(x^3 - x^2)} \\
 -6x^2 + 6 \\
 \underline{-(-6x^2 + 6x)} \\
 -6x + 6 \\
 \underline{-(-6x + 6)} \\
 - \quad /
 \end{array}$$

$$x_{1/2} = 3 \pm \sqrt{9 + 6}$$

$$3 \pm \sqrt{15}$$

$$\begin{array}{r}
 (x^3 - 2x^2 - 5x + 6) \cdot (x-1) = x^2 - x - 6 \\
 \underline{-(x^3 - x^2)} \\
 -x^2 - 5x + 6 \\
 \underline{-(-x^2 + x)} \\
 -6x + 6 \\
 \underline{-(-6x + 6)} \\
 \hline
 \end{array}$$

$$\underbrace{x^2 - x - 6}_{(x-3)(x+2)}$$

$$\mu = \{1; -2; 3\}$$

$$x^4 - 2x^3 - 7x^2 + 8x + 12 = 0$$