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$$1) \left. \begin{array}{l} x \in \mathbb{N} \\ x \bmod 4 = 0 \\ x \bmod 5 \neq 0 \\ x \bmod 5 \neq 0 \end{array} \right\} M = \{ x \in \mathbb{N} \mid x \bmod 4 = 0 \wedge x \bmod 5 \neq 0 \}$$

$$2) M = \{ x \in \mathbb{Z} \mid x \bmod 7 = 0 \vee x \bmod 4 = 0 \}$$

$$3) M = \left\{ \begin{array}{l} x \in \mathbb{N}^{>100} \mid x \bmod 9 \neq 0 \\ x \in \mathbb{N} \mid x > 100 \wedge x \bmod 9 \neq 0 \end{array} \right\}$$

$$4) M = \{ x \in]5; 80[_{\mathbb{N}} \mid x \bmod 4 \neq 0 \wedge x \bmod 5 \neq 0 \}$$

$$5) M = \{ x \in \mathbb{Z}^{<-42} \mid \underbrace{x \bmod 7 = 0 \wedge x \bmod 3 = 0}_{x \bmod 21 = 0} \}$$

$$\frac{4i-5}{3i+1} \cdot \frac{3i-1}{3i-1} = \frac{(4i-5)(3i-1)}{-9-1} = \frac{-7-19i}{-10}$$

→ $17i^2 - 15i - 4i + 5$

$$\left(\frac{7}{10} + 1.9i \right)$$

$$\frac{4i-5}{3} = \frac{4i}{3} - \frac{5}{3} = \frac{4}{3}i - \frac{5}{3}$$

$$\rightarrow (3i+1)^2 = 9i^2 + 6i + 1 = -8 + 6i$$

$$\lim_{x \rightarrow 2} \frac{4-2x}{\sqrt{3x+10} - 2x} \left. \begin{array}{l} \frac{f(x)}{g(x)} : \frac{0}{0} \rightarrow \frac{f'(x)}{g'(x)} \\ \rightarrow \frac{-2 \cdot (\sqrt{3x+10} + 2x)}{-4x-5} \end{array} \right\}$$

$$\begin{array}{l} 3x+10 - 4x^2 \\ (-4x^2 + 3x + 10) = (x-2)(-4x-5) \\ \rightarrow -4x^2 + 8x - 5x + 10 \end{array}$$

$$x=2: \frac{-2 \cdot (\sqrt{16} + 4)}{-8-5} = \frac{16}{13}$$

$$1) \frac{\sqrt{x} - 3x}{2\sqrt{x} - 5} \cdot \frac{2\sqrt{x} + 5}{2\sqrt{x} + 5} = \frac{2x + 5\sqrt{x} - 6x\sqrt{x} - 15x}{4x - 25}$$

$$(\alpha - \beta) \cdot (\alpha + \beta) = \alpha^2 - \beta^2$$

$$(2\sqrt{x} - 5)^2 = 4x - 20\sqrt{x} + 25$$

$$6x\sqrt{x} = 6\sqrt{x^3}$$

$$\downarrow$$

$$6\sqrt{x^2} \cdot \sqrt{x} = 6 \cdot \sqrt{x^2 \cdot x}$$

$$2) \frac{4i - 3}{2 + i} \cdot \frac{2 - i}{2 - i} = \frac{8i - 4i^2 - 6 + 3i}{4 - i^2} = \frac{-2 + 11i}{5}$$

$$(\alpha + \beta) \cdot (\alpha - \beta) = \alpha^2 - \beta^2$$

$$= -\frac{2}{5} + \frac{11}{5}i$$

$$(2i - 7)^2 \quad \xrightarrow{i=x; x^2=-1} \quad (2x - 7)^2 = 4x^2 - 28x + 49 = -28i + 45$$

$$-4 - 28x + 49$$

$$-28x + 45 \quad \xrightarrow{x=i}$$

Welche neuen Begriffe habe ich kennen gelernt?

SS von Schiisa

Linearfaktor

Polynomdivision

1.-3. Binom

Mache den Nenner rational

Anwendung der Binome

Viola

Limes $\begin{cases} \nearrow \text{geschichtlich} \\ \searrow \text{mathematisch} \end{cases}$

Nullstelle ($y=0$)

Schnittpunkte x-Achse

Komplexe

Division