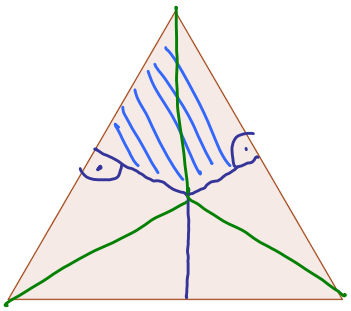
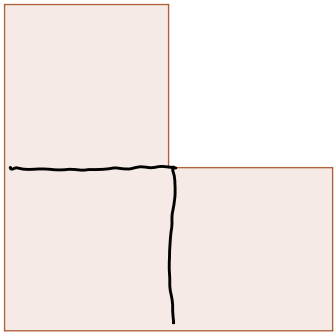
1) GRA + Terme

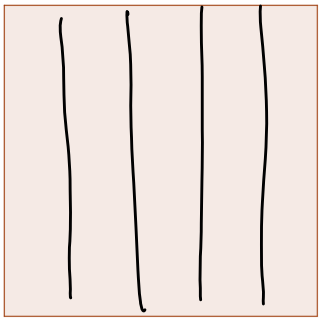
Denksport



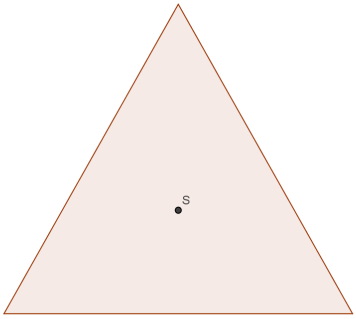
3 Teile

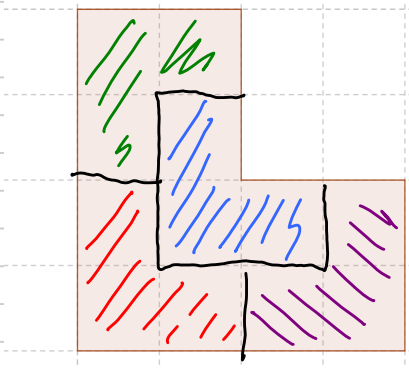


4 Teile



5 Teile





Grundlagen

Beweis ∞ Primzahlen

Ang.: $\mathbb{P} = \{2, 3, 5, 7, \dots, p\}$

$\bar{p} = 2 \cdot 3 \cdot 5 \cdot 7 \cdot \dots \cdot p + 1$

$\bar{p} > p$

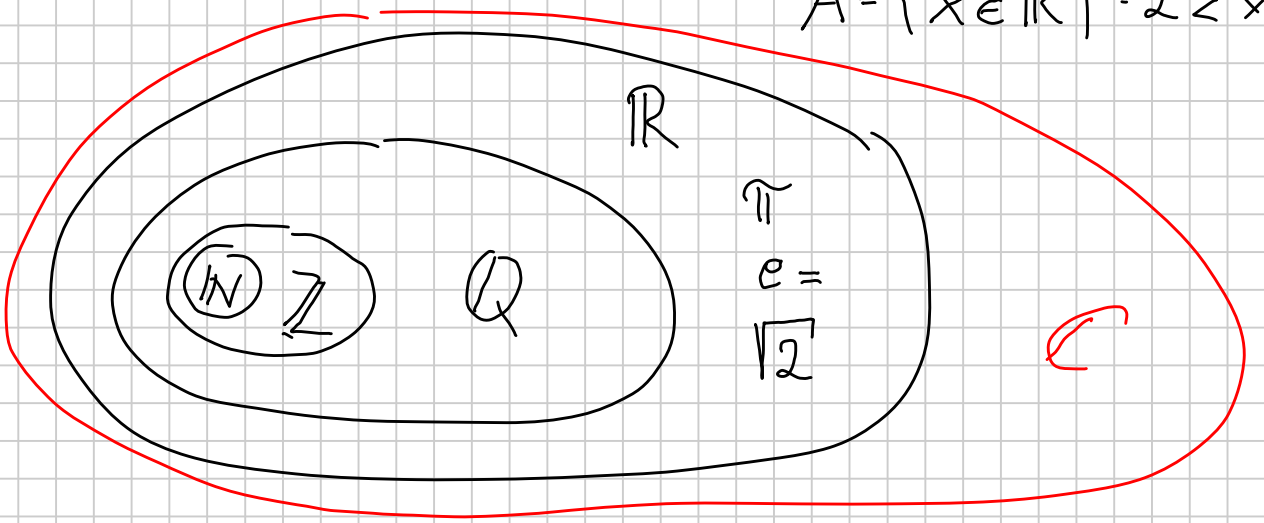
↯

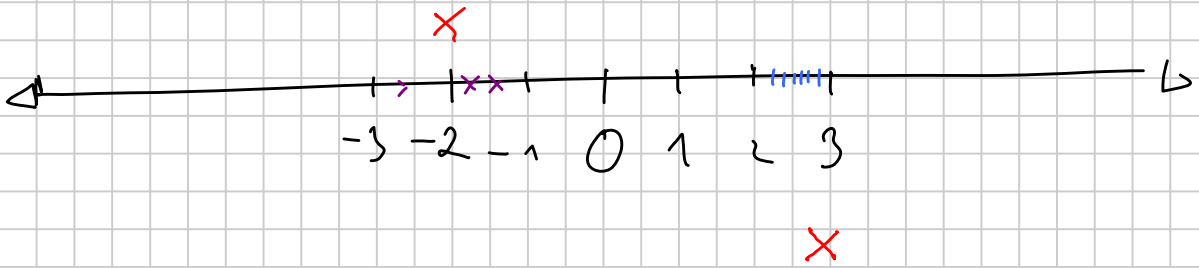
$\Rightarrow \quad \infty \quad \mathbb{P}$

$\mathbb{R}$ ... Reele Zahlen

$[-2;3]$ Gegenteil $]-2;3[$

$A = \{x \in \mathbb{R} \mid -2 < x < 3\}$





1.4.

~~∃~~	$\exists$ ...	Es gibt
∀	$\forall$ ...	Für alle
	$\neg$	
	$\wedge$	und
	$\vee$	oder (lat. vel)
$A \subseteq B$		ist Teilmenge
$A \cap B$		Schnittmenge
$A \cup B$		Vereinigungsmenge

2) 4 GRA

$20 \cdot 16 \cdot 5 =$

$100 \cdot 16 = \underline{\underline{1600}}$

$17 \cdot 4 =$

$17 + 17 + 17 + 17 = \underline{\underline{68}}$

$(a+b) \cdot c = a \cdot c + b \cdot c$

$(a+b) \cdot (c+d) = ac + ad + bc + b \cdot d$

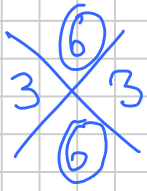
Modulo

Exkurs: $18 + 6 \equiv 0$

$9 + 5 = 2$

Adam Ries

$$\begin{array}{r} 345 \\ +\ 768 \\ \hline 1113 \end{array}$$ ✓



KLAPUSTRI

5 et 3 ×

$2 - \{4 + 3 \cdot [6 - 5 \cdot (3 - 5)] + 1\}$

$2 - \{4 + 3 \cdot [6 - 5 \cdot -2\ ] + 1\}$

$2 - \{4 + 3 \cdot [6 + 10\ ] + 1\}$

$2 - \{4 + 3 \cdot 16 + 1\}$

$2 - \{4 + 48 + 1\}$

$2 - 53 = \underline{\underline{-51}}$

3) Bruchzahlen

Nicht $\frac{3}{4,5}$ $\qquad \frac{-3}{2} = \frac{3}{-2} = -\frac{3}{2}$

~~256~~ ~~128~~ ~~64~~ ~~8~~ 1
~~1024~~ ~~512~~ ~~256~~ ~~32~~ 4 $= \frac{1}{4}$

48	2
24	2
12	2
6	2
3	3
1	

$ggT(48,36) = (12,36) = (12,0)$

$ggT(130,426) = (130,36) = (22,36) = (22,14)$

$(8,14) = (8,6) = (2,6) = (2,0) = 2$

Addition + Subtraktion

$$\frac{4}{9} = \frac{8}{18} = \frac{32}{72} = \frac{48}{108} = \frac{4\cdot a}{9\cdot a}$$

(.6 über $\frac{8}{18}$ → $\frac{48}{108}$; .6 unter $\frac{8}{18}$ → $\frac{48}{108}$)

$2\frac{1}{5} + 5\frac{3}{5} = 7\frac{4}{5}$ $\qquad 3\frac{7}{8} + 4\frac{5}{8} = 7\frac{12}{8} = 8\frac{4}{8} = 8\frac{1}{2}$

$4\frac{3}{7} - 2\frac{6}{7} = 3\frac{10}{7} - 2\frac{6}{7} = 1\frac{4}{7}$

$$\frac{1}{5} + \frac{3}{4} = \frac{4+15}{20} = \frac{19}{20}$$

$kgV(8, 12, 16) =$ $\qquad$ $16, 32, 48, \ldots$

Multipl.

$$\frac{1}{5} \cdot \frac{3}{1} = \frac{3}{5}$$

$$3\frac{1}{3} \cdot 1\frac{4}{5} = \frac{\cancel{10}^{2}}{\cancel{3}_{1}} \cdot \frac{\cancel{9}^{3}}{\cancel{5}_{1}} = \frac{6}{1} = 6$$

Division

$$\frac{6}{5} : 3 = \frac{\cancel{6}^{2}}{5} \cdot \frac{1}{\cancel{3}_{1}} = \frac{2}{5}$$

$$5\frac{5}{6} : 1\frac{3}{4} = \frac{35}{6} : \frac{7}{4} = \frac{\cancel{35}^{5}}{\cancel{6}_{3}} \cdot \frac{\cancel{4}^{2}}{\cancel{7}_{1}} = \frac{10}{3} = 3\frac{1}{3}$$

$$= \frac{\frac{\cancel{35}^{5}}{\cancel{6}_{3}}}{\frac{\cancel{7}}{\cancel{4}_{2}}} = \ldots = 3\frac{1}{3}$$

Kettenbrüche:

$$\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{3+\frac{1}{5}}}}$$

$\ddots$

Bsp.

$$10\frac{2}{3} - \left(4\frac{2}{5} - 1\frac{7}{10}\right) : \left(2\frac{2}{5} - 1\frac{1}{2}\right) =$$

$$10\frac{2}{3} - \left(4\frac{4}{10} - 1\frac{7}{10}\right) : \left(2\frac{4}{10} - 1\frac{5}{10}\right) =$$

$$10\frac{2}{3} - \left(3\frac{14}{10} - 1\frac{7}{10}\right) : \left(1\frac{14}{10} - 1\frac{5}{10}\right) =$$

$$10\frac{2}{3} - 2\frac{7}{10} : \frac{9}{10} =$$

$$10\frac{2}{3} - \frac{27}{10} \cdot \frac{10}{9} =$$

(3 und 1 über $\frac{27}{10}$, 1 und 1 über $\frac{10}{9}$)

$$10\frac{2}{3} - \frac{3}{1} = 7\frac{2}{3}$$