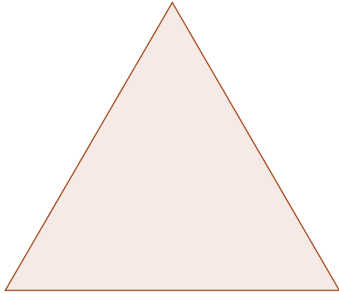
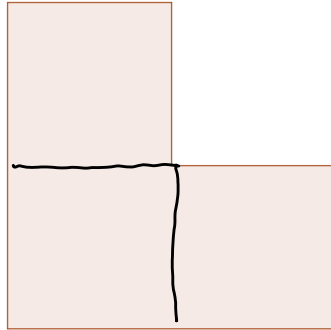


# 1) GRA + Terme

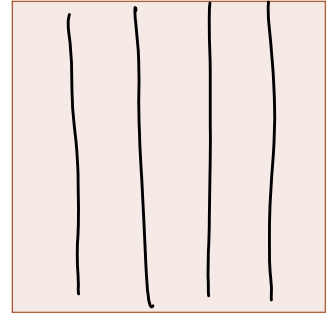
## Denksport



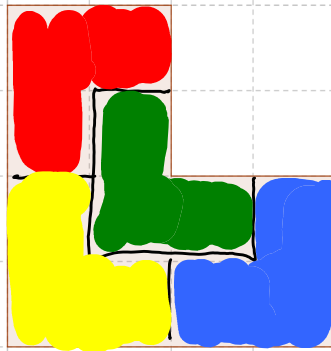
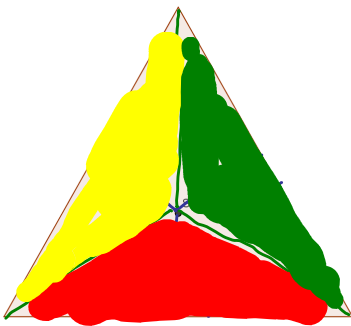
3 Teile



4 Teile



5 Teile



## Grundlagen

Beweis  $\infty$  Primzahlen

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

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

$\Rightarrow \infty \text{ } \text{?Z}$

$$\bar{p} > p$$



S. 1/3

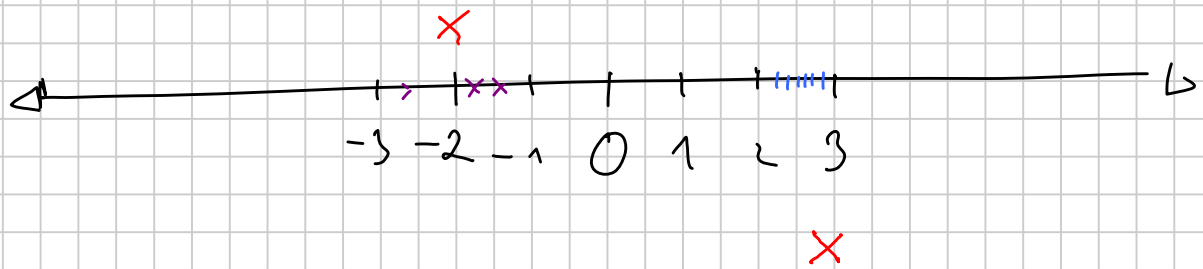
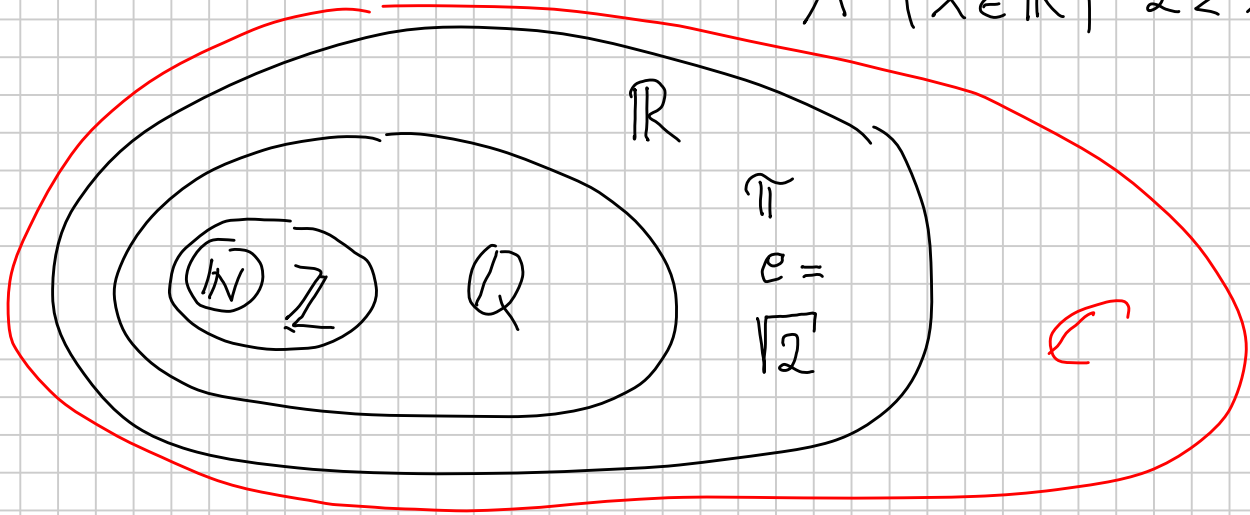
$\mathbb{R}$  ... Reelle Zahlen

$[-2; 3]$

gegenüber

$]-2; 3[$

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



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

$$\begin{array}{r} 20 \cdot 16 \cdot 5 = \\ \hline 100 \cdot 16 = \underline{\underline{1600}} \end{array}$$

$$\begin{array}{r} 17 \cdot 4 = \\ 17 \\ 17 \\ 17 \\ 17 \\ \hline 68 \end{array}$$

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

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

Exkurs:  $18+6 \equiv 0$   
 $9+5 = 2$

Modulo

Adam Reis

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

$$\begin{array}{r} 3 \textcircled{6} \\ \times 3 \\ \hline 3 \textcircled{6} \end{array}$$

KLAPUSTRI

5 et 3 x

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

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

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

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

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

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

### 3) Bruchzahlen



C 1  
C' 2  
C''

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

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

$$\begin{array}{r} 48 \overline{) 2} \\ 24 \overline{) 2} \\ 12 \overline{) 2} \\ 6 \overline{) 2} \\ 3 \overline{) 3} \\ 1 \end{array}$$

$$\text{ggT}(48, 36) = (12, 36) = (\underline{12}, 0)$$

$$\text{ggT}(130, 426) = (130, 36) = (22, 36) = (22, 14)$$

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

Add + 5-5kr

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

-6  
+6

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

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

$$= \underline{\underline{8\frac{1}{2}}}$$

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

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

$$\text{kgV}(8, 12, 16) =$$

$$16, 32, 48, \dots$$

Multipl.

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

$$3\frac{1}{3} \cdot 1\frac{4}{5} = \frac{\cancel{10}^2}{\cancel{3}_1} \cdot \frac{\cancel{4}^3}{\cancel{5}_1} = \frac{6}{1} = 6$$

Division

$$\frac{6}{5} : 3 = \frac{\cancel{6}^2}{\cancel{5}_1} \cdot \frac{1}{\cancel{3}_1} = \frac{2}{5}$$

$$\begin{aligned} 5\frac{5}{6} : 1\frac{3}{4} &= \frac{35}{6} : \frac{7}{4} = \frac{\cancel{35}^5}{\cancel{6}_3} \cdot \frac{\cancel{4}^2}{\cancel{7}_1} = \frac{10}{3} = \underline{\underline{3\frac{1}{3}}} \\ &= \frac{\cancel{35}^5}{\cancel{6}_3} \cdot \frac{4}{7} = \dots = 3\frac{1}{3} \end{aligned}$$

Kettenbrüche:

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

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

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

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

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

$$10\frac{2}{3} - \frac{\cancel{27}^3}{\cancel{10}_1} \cdot \frac{\cancel{10}^1}{\cancel{9}_1} =$$

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