# Numeri razionali

$\frac{1}{2}$ $\frac{4}{2}$ $\frac{4}{3}$

propria apparente impropria

$\frac{m}{n}$ con $m, n \in \mathbb{N}$, $n \neq 0$

$\frac{m}{n} < 1$ se $m < n$

$\frac{m}{n} > 1$ se $m > n$

$\frac{1}{2}$ $\frac{3}{6}$ $\frac{2}{6}$

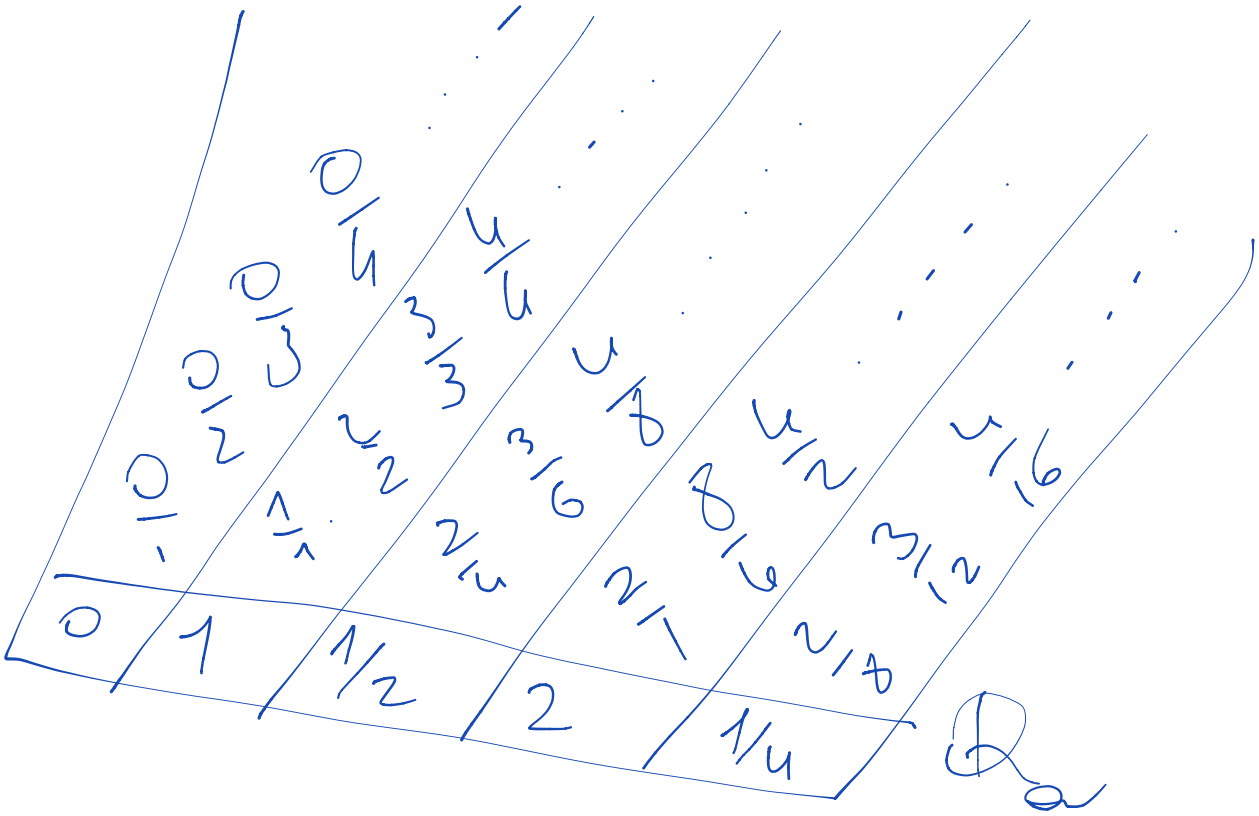
$$\frac{a}{b} = \frac{c}{d} \iff ad = bc$$

$$\left[\frac{1}{2}\right] = \left\{\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \ldots\ldots\right\}$$

pr. inv. $\quad \frac{m}{n} \cdot \frac{z}{z} = \frac{mz}{mz}$

$$n \neq 0$$
$$z \neq 0$$

$$[0] = \left\{0, \frac{0}{2}, \frac{0}{3}, \frac{0}{4}, \frac{0}{5}, \ldots\ldots\right\}$$




$$\forall n \in \mathbb{N} \Rightarrow \frac{n}{1} \in \mathbb{Q}_a$$

$n$ e $\frac{n}{1}$ non sono la stessa cosa

$1 \in \mathbb{N}$ non è $+1 \in \mathbb{Z}$

Si parla il concetto di

<u>SUCCESSIVO</u>

$$\forall p, q \in \mathbb{Q}, \exists z \in \mathbb{Q} : p < z < q$$

<u>DENSO</u>

$$\mathbb{Q} = \left\{ \frac{m}{n} : m, n \in \mathbb{Z}, n \neq 0 \right\}$$

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

| | |
|---|---|
| $\frac{3}{6}$ <br> $\frac{2}{4}$ | $\frac{3}{9}$ <br> $\frac{4}{6}$ |
| $\frac{1}{2}$ | $\frac{2}{3}$ |

$$\frac{4}{5} + \frac{2}{3} = \frac{12+10}{15} = \frac{22}{15}$$

$$\cancel{\frac{2}{1} + \frac{3}{5}} = \frac{13}{5}$$

$$\cancel{2 + \frac{3}{4}} = \frac{11}{4}$$

$$\frac{10+3}{5} = \frac{13}{5}$$

$$\cancel{\frac{7}{3} > \frac{8}{5}} \qquad \frac{35}{15} > \frac{24}{15}$$

$$35 > 24$$

$$\frac{2}{3} \cdot \frac{5}{4} = \frac{10}{12} = \frac{5}{6}$$

$$\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$$

$$\frac{a}{b} : \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$$

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n} \qquad n \in \mathbb{N}$$

$$\left(\frac{2}{3}\right)^4 = \frac{2^4}{3^4} = \frac{16}{81}$$

$$\left(\frac{2}{3}\right)^{-1} = \frac{3}{2}$$

$$\left(\frac{2}{3}\right)^{-2} = \left(\frac{3}{2}\right)^2 = \frac{9}{4}$$

$$\frac{2^{-1}}{3} = \frac{\frac{1}{2}}{\frac{3}{1}} = \frac{1}{2} \cdot \frac{1}{3} = \frac{1}{6}$$

$$\frac{\frac{1}{3}}{\frac{3}{1}} = \frac{1}{9}$$