

Given two integers we can determine easily which is bigger. This relation of order can be defined also between fractions.

Let's consider the fractions $\frac{a}{b}$ and $\frac{c}{d}$ with b and d positives. The fraction $\frac{a}{b}$ is bigger than the fraction $\frac{c}{d}$ if $a \cdot d > c \cdot b$.

This relation is natural because $\frac{a}{b} = \frac{a \cdot d}{b \cdot d}$ and $\frac{c}{d} = \frac{c \cdot b}{d \cdot b}$, and, as they have the same denominator, we can just focus on the numerator.

Let's see some example where we are going to sort the numbers $\frac{1}{3}$, $\frac{2}{5}$ and $\frac{1}{4}$.

We write them with a common denominator,

$$\frac{1}{3} = \frac{1 \cdot 5 \cdot 4}{3 \cdot 5 \cdot 4} = \frac{20}{60}$$

$$\frac{2}{5} = \frac{2 \cdot 3 \cdot 4}{5 \cdot 3 \cdot 4} = \frac{24}{60}$$

$$\frac{1}{4} = \frac{1 \cdot 3 \cdot 5}{4 \cdot 3 \cdot 5} = \frac{15}{60}$$

We have $15 < 20 < 24$ and therefore $\frac{1}{4} < \frac{1}{3} < \frac{2}{5}$