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0.1 Functions of rational numbers

0.1.1 Rational addition

Then we can define addition as:

$$(a, b) + (c, d) = (a.d + b.c, b.d)$$

$$a + b = c$$

$$c_1 = a_1b_2 + a_2b_1$$

$$c_1 = a_2b_2$$

0.1.2 Rational subtraction

$$a - b = c$$

$$c_1 = a_1b_2 - a_2b_1$$

$$c_1 = a_2b_2$$

0.1.3 Rational multiplication

Similarly, multiplication can be defined as:

$$(a, b).(c, d) = (a.c, b.d)$$

$$ab = c$$

$$c_1 = a_1b_1$$

$$c_1 = a_2b_2$$

0.1.4 Rational division

$$\frac{a}{b} = c$$

$$c_1 = a_1b_2$$

$$c_1 = a_2b_1$$