0.1 Functions of rational numbers

0.1.1 Rational addition

Then we can define addition as:

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

$a + b = c$

$c_1 = a_1 b_2 + a_2 b_1$

$c_1 = a_2 b_2$

0.1.2 Rational subtraction

$a - b = c$

$c_1 = a_1 b_2 - a_2 b_1$

$c_1 = a_2 b_2$

0.1.3 Rational multiplication

Similarly, multiplication can be defined as:

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

$ab = c$

$c_1 = a_1 b_1$

$c_1 = a_2 b_2$

0.1.4 Rational division

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

$c_1 = a_1 b_2$

$c_1 = a_2 b_1$