05 - Numere raționale (I)

Reguli de calcul

Adunarea

REGULA 1

$$\frac{a}{b}+\frac{c}{d}=\frac{a\cdot d+b\cdot c}{b\cdot d}$$

Exemplu:

$$\frac{2}{5}+\frac{3}{7}=\frac{2\cdot 7+3\cdot 5}{5\cdot 7}=\frac{14+15}{35}=\frac{29}{35}$$

Scăderea

REGULA 2

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

Exemplu:

$$\frac{5}{7} - \frac{2}{3} = \frac{5 \cdot 3 - 2 \cdot 7}{7 \cdot 3} = \frac{15 - 14}{21} = \frac{1}{21}$$

Înmulțirea

REGULA 3

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

Exemplu:

$$\frac{5}{3} \cdot \frac{2}{7} = \frac{10}{21}$$

Împărțirea

REGULA 4

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

Exemplu:

$$\frac{5}{2} : \frac{2}{7} = \frac{5}{2} \cdot \frac{7}{2} = \frac{35}{4}$$

Ridicarea la putere

REGULA 5

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

Exemplu:

$$\left(\frac{2}{5}\right)^3 = \frac{2^3}{5^3} = \frac{8}{125}$$

Numere negative

REGULA 6

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

Exemplu:

$$-\frac{3}{7} = \frac{-3}{7} = \frac{3}{-7}$$

Înmulțirea ridicărilor la putere

REGULA 7

$$\left(\frac{a}{b}\right)^n \cdot \left(\frac{a}{b}\right)^m = \left(\frac{a}{b}\right)^{n+m}$$

Exemplu:

$$\left(\frac{2}{5}\right)^2 \cdot \left(\frac{2}{5}\right)^3 = \left(\frac{2}{5}\right)^5$$

Împărțirea ridicărilor la putere

REGULA 8

$$\left(\frac{a}{b}\right)^n : \left(\frac{a}{b}\right)^m = \left(\frac{a}{b}\right)^{n-m}$$

Exemplu:

$$\left(\frac{3}{5}\right)^3 : \left(\frac{3}{5}\right)^2 = \left(\frac{3}{5}\right)^1 = \frac{3}{5}$$

Reguli speciale

DE REȚINUT

$$R_1 : \left(\frac{a}{b}\right)^0 = 1$$

$$R_2 : \left(\frac{a}{b}\right)^1 = \frac{a}{b}$$