

## Množenje razlomaka

– rješenja –

- 1) ▶ **kratimo** prirodni broj i nazivnik (*ako možemo*)  
▶ prirodni broj **množi** brojnik, nazivnik prepíšemo  
▶ rezultat pretvorimo u **mješoviti broj** (*ako možemo*)

$$\begin{array}{llll} \text{a)} 3 \cdot \frac{2}{5} = \frac{6}{5} & \text{b)} 4 \cdot \frac{2}{3} = \frac{8}{3} & \text{c)} \cancel{1}7^1 \cdot \frac{7}{\cancel{1}7_1} = 7 & \text{d)} \cancel{6}^2 \cdot \frac{5}{\cancel{9}_3} = \frac{10}{3} \\ = 1\frac{1}{5} & = 2\frac{2}{3} & & = 3\frac{1}{3} \end{array}$$

$$\text{e)} \cancel{2}8^4 \cdot \frac{9}{\cancel{36}_7} = \frac{36}{7} = 5\frac{1}{5}$$

- 2) ▶ **kratimo** brojnik i nazivnik (*ako možemo*)  
▶ **množimo** brojnik s brojnikom, te nazivnik s nazivnikom  
▶ rezultat pretvorimo u **mješoviti broj** (*ako možemo*)

$$\begin{array}{llll} \text{a)} \frac{\cancel{4}^1}{\cancel{16}_3} \cdot \frac{\cancel{5}^1}{\cancel{16}_4} = \frac{1}{12} & \text{b)} \frac{1}{3} \cdot \frac{4}{9} = \frac{4}{27} & \text{c)} \frac{\cancel{7}^1}{\cancel{8}_4} \cdot \frac{\cancel{6}^3}{\cancel{7}_1} = \frac{3}{4} & \text{d)} \frac{\cancel{16}^2}{\cancel{36}_{11}} \cdot \frac{\cancel{15}^5}{\cancel{8}_1} = \frac{10}{11} \\ & & & \text{e)} \frac{\cancel{25}^5}{\cancel{7}_1} \cdot \frac{\cancel{28}^4}{\cancel{15}_3} = \frac{20}{3} \\ & & & = 6\frac{2}{3} \end{array}$$

- 3) ▶ mješoviti broj pretvorimo u razlomak, potom množimo  
▶ prirodan broj možemo zapisati u obliku razlomka s **nazivnikom 1**

$$\begin{array}{lll} \text{a)} 4 \cdot 2\frac{1}{2} = \frac{\cancel{4}^2}{1} \cdot \frac{5}{\cancel{2}_1} & \text{b)} 4\frac{3}{5} \cdot 15 = \frac{23}{\cancel{5}_1} \cdot \frac{\cancel{15}^3}{1} & \text{c)} 5\frac{1}{2} \cdot 3\frac{3}{4} = \frac{11}{2} \cdot \frac{15}{4} \\ = 10 & = 69 & = \frac{165}{8} \\ & & = 20\frac{5}{8} \end{array}$$

$$\begin{array}{ll} \text{d)} 4\frac{1}{6} \cdot 4\frac{4}{5} = \frac{\cancel{25}^5}{\cancel{6}_1} \cdot \frac{\cancel{24}^4}{\cancel{5}_1} & \text{e)} 9\frac{1}{5} \cdot 2\frac{1}{2} = \frac{\cancel{46}^{23}}{\cancel{5}_1} \cdot \frac{\cancel{5}^1}{\cancel{2}_1} \\ = 20 & = 23 \end{array}$$

### 4) Izračunaj:

- ▶ kratimo bilo koji brojnik s bilo kojim nazivnikom  
▶ nakon kraćenja množimo brojnik s brojnikom, te nazivnik s nazivnikom

$$\begin{array}{lll} \text{a)} \frac{\cancel{4}^1}{\cancel{9}_{3_1}} \cdot \frac{\cancel{3}^1}{\cancel{4}_1} \cdot \frac{\cancel{15}^5}{16} = \frac{5}{16} & \text{b)} \frac{\cancel{12}^2}{\cancel{5}_1} \cdot \frac{\cancel{3}^1}{1} \cdot \frac{2}{\cancel{3}_1} \cdot \frac{\cancel{25}^5}{\cancel{6}_1} = 20 & \text{c)} 1\frac{1}{9} \cdot 2\frac{1}{5} \cdot \frac{3}{4} = \frac{\cancel{10}^{\cancel{2}^1}}{\cancel{9}_3} \cdot \frac{11}{\cancel{5}_1} \cdot \frac{\cancel{3}^1}{\cancel{4}_2} \\ & & = \frac{11}{6} = 1\frac{5}{6} \end{array}$$

5) Izračunaj:

$$\begin{aligned} \text{a)} \quad \left(\frac{14}{15} - \frac{5}{6}\right) \cdot \frac{2}{3} &= \frac{28 - 25}{30} \cdot \frac{2}{3} \\ &= \frac{\cancel{3}^1}{\cancel{30}_{15}} \cdot \frac{2^1}{\cancel{3}_1} \\ &= \frac{1}{15} \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \left(\frac{3}{4} + 0.4 + \frac{1}{2}\right) \cdot \frac{1}{2} &= \left(\frac{3}{4} + \frac{2}{5} + \frac{1}{2}\right) \cdot \frac{1}{2} \\ &= \frac{15 + 8 + 10}{20} \cdot \frac{1}{2} \\ &= \frac{33}{20} \cdot \frac{1}{2} \\ &= \frac{33}{40} \end{aligned}$$

$$\begin{aligned} \text{c)} \quad \left(\frac{1}{6} + \frac{1}{4}\right) \cdot \frac{6}{5} - \frac{1}{5} \cdot \frac{1}{2} &= \frac{2 + 3}{12} \cdot \frac{6}{5} - \frac{1}{10} \\ &= \frac{5^1}{12_2} \cdot \frac{6^1}{5_1} - \frac{1}{10} \\ &= \frac{1}{2} - \frac{1}{10} \\ &= \frac{5 - 1}{10} \\ &= \frac{\cancel{4}^2}{10_5} \\ &= \frac{2}{5} \end{aligned}$$

$$\begin{aligned} \text{d)} \quad \left(7\frac{1}{5} - 5\frac{9}{20}\right) \cdot \left(2\frac{3}{5} - \frac{3}{10}\right) &= \left(\frac{36}{5} - \frac{109}{20}\right) \cdot \left(\frac{13}{5} - \frac{3}{10}\right) \\ &= \frac{144 - 109}{20} \cdot \frac{26 - 3}{10} \\ &= \frac{\cancel{35}^7}{20} \cdot \frac{23}{10_2} \\ &= \frac{161}{40} \\ &= 4\frac{1}{40} \end{aligned}$$

6) a)  $\frac{7}{5}$  kilometara u metrima  $\frac{7}{5} \text{ km} = \frac{7}{5_1} \cdot \cancel{1000}^{200} = 1\,400 \text{ m}$

b)  $\frac{7}{8}$  kilograma u dekagramima  $\frac{7}{8} \text{ kg} = \frac{7}{8_2} \cdot \cancel{100}^{25} = \frac{675}{2} = 337.5 \text{ dag}$

c)  $\frac{11}{12}$  sata u minutama  $\frac{11}{12} \text{ h} = \frac{11}{\cancel{12}_1} \cdot \cancel{60}^5 = 55 \text{ min}$

7) Izračunaj opseg i površinu pravokutnika duljina susjednih stranica  $7\frac{3}{4}$  i  $6\frac{1}{4}$  metara.

$$o = 2 \cdot (a + b)$$

$$P = a \cdot b$$

$$o = 2 \cdot \left(7\frac{3}{4} + 6\frac{1}{4}\right)$$

$$P = 7\frac{3}{4} \cdot 6\frac{1}{4}$$

$$o = 2 \cdot 14$$

$$P = \frac{31}{4} \cdot \frac{25}{4}$$

$$o = 28 \text{ m}$$

$$P = \frac{775}{16}$$

$$P = 48\frac{7}{16} \text{ m}^2$$

8) Umnožak brojeva  $\frac{7}{8}$  i  $1\frac{2}{3}$  umanji za  $\frac{3}{4}$ .

$$\begin{aligned}\frac{7}{8} \cdot 1\frac{2}{3} - \frac{3}{4} &= \frac{7}{8} \cdot \frac{5}{3} - \frac{3}{4} \\ &= \frac{35}{24} - \frac{3}{4} \\ &= \frac{35 - 18}{24} \\ &= \frac{17}{24}\end{aligned}$$

9) Biciklist u jednoj minuti prijeđe  $\frac{7}{8}$  kilometra.

a) Koliko će **kilometara** prijeći za 96 minuta?

$$1 \text{ min} \quad \frac{7}{8} \text{ kilometra}$$

$$96 \text{ min} \quad 96 \cdot \frac{7}{8} = \mathbf{84 \text{ kilometra}}$$

b) Koliko će **metara** prijeći za 96 minuta?

$$84 \text{ km} = \mathbf{84\,000 \text{ metara}}$$