

NALOGE

1. Izračunaj $\frac{7}{8} + \frac{3}{10}$ in rezultat zapiši z okrajšanim ulomkom.

$$\frac{7}{8} + \frac{3}{10} = \frac{47}{40}$$

$$\frac{7}{8} + \frac{3}{10} = \frac{70}{80} + \frac{24}{80} = \frac{94}{80} \stackrel{:2}{=} \frac{47}{40}$$

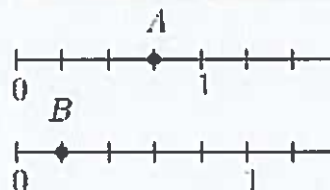
2. Izračunaj $11\frac{1}{6} - 2\frac{4}{11}$. Izračunano vrednost zapiši z okrajšanim ulomkom.

$$11\frac{1}{6} - 2\frac{4}{11} = \frac{581}{66} = 8\frac{53}{66}$$

$$11\frac{1}{6} - 2\frac{4}{11} = \frac{67}{6} - \frac{26}{11} = \frac{737}{66} - \frac{156}{66} = \frac{581}{66} = 8\frac{53}{66}$$

4. V zvezek zapiši vrednost števil A in B , ki sta prikazani na številske poltraku. Izračunaj vsoto in razliko števil.

$$A + B = \frac{19}{20} \quad A - B = \frac{11}{20}$$



$$A = \frac{3}{4}$$

$$B = \frac{1}{5}$$

$$\frac{3}{4} + \frac{1}{5} = \frac{15}{20} + \frac{4}{20} = \frac{19}{20}$$

$$\frac{3}{4} - \frac{1}{5} = \frac{15}{20} - \frac{4}{20} = \frac{11}{20}$$

5. Poveži številski izraz z njegovo vrednostjo.

$$4 + 2\frac{1}{2} = 4 + \frac{5}{2} = \frac{8}{2} + \frac{5}{2} = \frac{13}{2} = \underline{\underline{6\frac{1}{2}}}$$

$$\frac{3}{5} + 1\frac{2}{3} = \frac{3}{5} + \frac{5}{3} = \frac{9}{15} + \frac{25}{15} = \frac{34}{15} = \underline{\underline{2\frac{4}{15}}}$$

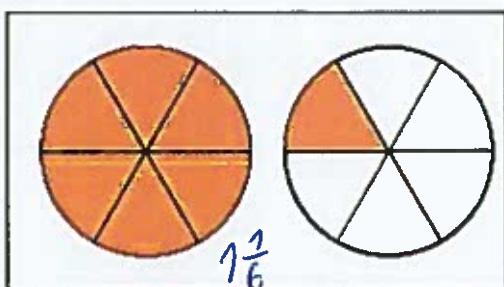
$$2\frac{3}{5} - \frac{1}{2} = \frac{13}{5} - \frac{1}{2} = \frac{26}{10} - \frac{5}{10} = \frac{21}{10} = \underline{\underline{2\frac{1}{10}}}$$

$$8\frac{1}{2} - 2\frac{3}{4} = \frac{17}{2} - \frac{11}{4} = \frac{34}{4} - \frac{11}{4} = \frac{23}{4} = \underline{\underline{5\frac{3}{4}}}$$

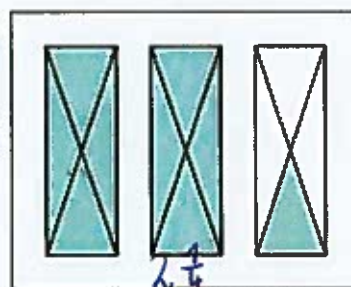
6. Izračunaj.

$$\frac{1}{2} + \frac{1}{3} = \frac{5}{6}; \quad \frac{3}{7} + \frac{2}{5} = \frac{29}{35}; \quad \frac{2}{9} + \frac{2}{11} = \frac{40}{99}$$

12. S slikama smo prikazali dva ulomka. Izračunaj vsoto in razliko prikazanih ulomkov. Ali so pravokotniki na desni sliki res razdeljeni na četrtine?



$1\frac{2}{6}$



$2\frac{1}{4}$

$$1\frac{2}{6} + 2\frac{1}{4} = 1\frac{2}{12} + 2\frac{3}{12} = \underline{\underline{3\frac{5}{12}}}$$

$$2\frac{1}{4} - 1\frac{2}{6} = 2\frac{3}{12} - 1\frac{1}{12} = \underline{\underline{1\frac{1}{12}}}$$

13. Vstavi taki števili, da bo veljala enakost.

$$\frac{2}{3} + \frac{\boxed{5}}{\boxed{24}} = \frac{7}{8} ; \quad \frac{\boxed{1}}{\boxed{6}} + \frac{5}{18} = \frac{4}{9}$$

$$\frac{2}{3} + x = \frac{7}{8}$$

$$x = \frac{7}{8} - \frac{2}{3} = \frac{7}{24} - \frac{16}{24}$$

$$x = \underline{\underline{\frac{5}{24}}}$$

$$x + \frac{5}{18} = \frac{4}{9}$$

$$x = \frac{4}{9} - \frac{5}{18} = \frac{8}{18} - \frac{5}{18}$$

$$x = \frac{3}{18} = \underline{\underline{\frac{1}{6}}}$$

ZAPIS IZRAZA PO BESEDILU

Vsota ulomkov $\frac{9}{10}$ in $\frac{2}{3}$. $\rightarrow \frac{9}{10} + \frac{2}{3} = \frac{27}{30} + \frac{20}{30} = \underline{\underline{\frac{47}{30}}}$

Razlika ulomkov $2\frac{1}{3}$ in $1\frac{1}{4}$. $\rightarrow 2\frac{1}{3} - 1\frac{1}{4} = \frac{8}{3} - \frac{5}{4} = \frac{28}{12} - \frac{15}{12} = \underline{\underline{\frac{13}{12}}}$

Številu $\frac{2}{5}$ prištej $1\frac{1}{10}$. $\rightarrow \frac{2}{5} + 1\frac{1}{10} = \frac{2}{5} + \frac{11}{10} = \frac{4}{10} + \frac{11}{10} = \underline{\underline{\frac{15}{10}}}$

Od števila $3\frac{2}{7}$ odštej $\frac{3}{4}$. $\rightarrow 3\frac{2}{7} - \frac{3}{4} = \frac{23}{7} - \frac{3}{4} = \frac{92}{28} - \frac{21}{28} = \underline{\underline{\frac{71}{28}}}$

MNOŽENJE ULOMKA Z NARAVNIM ŠTEVILOM

Ulolek z naravnim številom množimo tako, da imenovalec ulomka prepíšemo, števec ulomka pa pomnožimo z naravnim številom.

ZGLED

$$\frac{3}{7} \cdot 10^2 = \frac{3}{7} \cdot 100 = \frac{300}{7}$$

$$5 \cdot \frac{1}{6} = \frac{5}{6} \quad \frac{3}{19} \cdot 2 = \frac{6}{19} \quad \frac{5}{7} \cdot 10^3 = \frac{5000}{7}$$

1. Zmnožke zapiši v zvezek kot vsote. Izračunaj vrednosti.

$$5 \cdot \frac{2}{9} \quad \frac{7}{8} \cdot 2 \quad 4 \cdot 3 \frac{1}{5} \longrightarrow 3 \frac{1}{5} + 3 \frac{1}{5} + 3 \frac{1}{5} + 3 \frac{1}{5} = 12 \frac{4}{5}$$

$$\downarrow$$

$$\frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} = \frac{10}{9} = 1 \frac{1}{9}$$

$$\frac{7}{8} + \frac{7}{8} = \frac{14}{8} = 1 \frac{6}{8} = 1 \frac{3}{4}$$

2. Zmnoži. Če je mogoče, pred množenjem krajšaj.

$$4 \cdot \frac{1}{5} = \frac{4}{5}$$

$$15 \cdot \frac{2}{3} = \frac{30}{3} = 10$$

$$\frac{4}{11} \cdot 2 = \frac{8}{11}$$

$$20 \cdot \frac{3}{4} = 15$$

$$35 \cdot \frac{7}{20} = \frac{12}{4} \frac{1}{4}$$

$$3 \frac{2}{27} \cdot 3 = 9 \frac{2}{9}$$

MNOŽENJE ULOMKA Z ULOMKOM

Ulomek množimo z ulomkom tako, da števec množimo s števcem in imenovalec množimo z imenovalcem.

ZGLED

$$\frac{3}{10} \cdot \frac{1}{10} = \frac{3}{100} \quad \frac{2}{3} \cdot \frac{1}{3} = \frac{2}{9} \quad \frac{5}{9} \cdot \frac{7}{8} = \frac{35}{72}$$

1. Množi ulomka.

$$\frac{1}{2} \cdot \frac{1}{3} = \frac{1}{6} \quad \frac{2}{5} \cdot \frac{7}{9} = \frac{14}{45} \quad \frac{5}{6} \cdot \frac{11}{12} = \frac{55}{72}$$

2. Ulomke množi v zvezek. Pred množenjem krajšaj.

$$\begin{array}{l} \text{a) } \frac{1}{8} \cdot \frac{6}{7} \quad \text{b) } \frac{4}{5} \cdot \frac{1}{2} \quad \text{c) } \frac{3}{8} \cdot \frac{2}{3} \quad \text{č) } \frac{4}{35} \cdot \frac{21}{24} \rightarrow \frac{4}{35} \cdot \frac{21}{24} = \frac{1}{35} \cdot \frac{24}{6} = \frac{1}{5} \cdot \frac{3}{1} = \frac{1}{5} \cdot \frac{1}{2} = \frac{1}{10} \\ \downarrow \quad \quad \quad \downarrow \quad \quad \quad \downarrow \\ \frac{1}{7} \quad \quad \quad \frac{2}{5} \cdot 1 = \frac{2}{5} \quad \quad \quad \frac{3}{8} \cdot \frac{2}{3} = \frac{1}{2} \cdot \frac{2}{1} = \frac{1}{1} \cdot 1 = 1 \end{array}$$

→ NAJPREJ OKRAJŠAMO POTEM POMNOŽIMO!

4. Zapiši kot zmnožek in izračunaj.

$$\frac{1}{5} \text{ od } \frac{2}{5} = \frac{1}{5} \cdot \frac{2}{5} = \frac{2}{25}$$

$$\frac{5}{9} \text{ od } \frac{1}{2} = \frac{5}{9} \cdot \frac{1}{2} = \frac{5}{18}$$

$$\frac{1}{3} \text{ od } 2\frac{3}{4} = \frac{1}{3} \cdot \frac{11}{4} = \frac{11}{12}$$

$$0,6 \text{ od } 8\frac{3}{7} = \frac{6}{10} \cdot \frac{59}{7} = \frac{354}{70} = 5\frac{4}{7}$$

OB RATNA ULOMKA

Obratna ulomka sta ulomka, katerih produkt je enak 1. Obratna vrednost ulomka, manjšega od 1, je ulomek, večji od 1.

ZGLED

Vpiši take ulomke, da dobiš pravilne trditve.

$$\frac{5}{6} \cdot \frac{6}{5} = 1 \quad \frac{2}{3} \cdot \frac{3}{2} = 1 \quad \frac{5}{13} \cdot 2\frac{3}{5} = 1$$

DELJENJE ULOMKOV

DELJENJE Z NARAVNIM ŠTEVILOM

Če je števec ulomka deljiv z naravnim številom, potem **ulomek delimo z naravnim številom** tako, da števec ulomka delimo z naravnim številom.

ZGLED

Deli.

$$\frac{2}{3} : 2 = \frac{2}{3} : \frac{2}{1} = \frac{2}{3} \cdot \frac{1}{2} = \frac{2}{6} = \frac{1}{3}$$

$$\frac{6}{7} : 3 = \frac{2}{7} \quad \frac{2}{3} : 2 = \frac{1}{3} \quad \frac{8}{9} : 4 = \frac{2}{9}$$

$$\frac{6}{7} : 3 = \frac{6}{7} \cdot \frac{1}{3} = \frac{6}{21} = \frac{2}{7} \quad \frac{8}{9} : 4 = \frac{8}{9} : \frac{4}{1} = \frac{8}{9} \cdot \frac{1}{4} = \frac{8}{36} = \frac{2}{9}$$

Če števec ulomka ni deljiv z naravnim številom, potem **ulomek delimo z naravnim številom** tako, da imenovalec ulomka množimo z naravnim številom.

ZGLED

Izračunaj.

$$\frac{5}{9} : 4 = \frac{5}{9} : \frac{4}{1} = \frac{5}{9} \cdot \frac{1}{4} = \frac{5}{36}$$

$$\frac{1}{6} : 3 = \frac{1}{18} \quad \frac{5}{9} : 4 = \frac{5}{36} \quad \frac{8}{11} : 5 = \frac{8}{55}$$

$$\frac{1}{6} : 3 = \frac{1}{6} \cdot \frac{3}{1} = \frac{1}{6} \cdot \frac{1}{3} = \frac{1}{18} \quad \frac{8}{11} : \frac{5}{1} = \frac{8}{11} \cdot \frac{1}{5} = \frac{8}{55}$$

DELJENJE Z ULOMKOM

Ulomek delimo z ulomkom tako, da deljenec množimo z obratno vrednostjo delitelja.

ZGLED

Deli. Deljenec množi z obratno vrednostjo delitelja.

$$\begin{array}{l} \frac{1}{5} : \frac{1}{2} = \frac{1}{5} \cdot \frac{2}{1} = \frac{2}{5} \\ \frac{5}{8} : \frac{2}{3} = \frac{5}{8} \cdot \frac{3}{2} = \frac{15}{16} \\ \frac{2}{9} : \frac{3}{5} = \frac{2}{9} \cdot \frac{5}{3} = \frac{10}{27} \\ \frac{1}{4} : \frac{2}{5} = \frac{1}{4} \cdot \frac{5}{2} = \frac{5}{8} \end{array}$$

Če je deljenec ali delitelj naravno število, ga lahko pred deljenjem zapišemo z ulomkom. Velja $n = \frac{n}{1}$; $n \in \mathbb{N}$.

ZGLED

$$15 : \frac{2}{5} = \frac{15}{1} : \frac{2}{5} = \frac{15}{1} \cdot \frac{5}{2} = \frac{75}{2} = 37 \frac{1}{2}$$

Količnik ulomkov lahko zapišemo z **dvojnimi ulomkom**.

ZGLED

$$\frac{3}{5} : \frac{2}{7} = \frac{3}{5} \cdot \frac{7}{2} = \frac{3}{5} \cdot \frac{7}{2} = \frac{21}{10} = 2 \frac{1}{10}$$

Izračunaj količnike.

$$\frac{4}{5} : 2 = \frac{2}{5}$$

$$\frac{9}{11} : 3 = \frac{3}{11}$$

$$\frac{5}{8} : 5 = \frac{1}{8}$$

$$\frac{1}{5} : 2 = \frac{1}{10}$$

$$\frac{4}{7} : 3 = \frac{4}{21}$$

$$\frac{5}{6} : 7 = \frac{5}{42}$$

Deli. Deljenec množi z obratno vrednostjo delitelja.

$$\frac{3}{4} : \frac{4}{5} = \frac{3}{4} \cdot \frac{5}{4} = \frac{15}{16}$$

$$\frac{2}{7} : \frac{5}{7} = \frac{2}{7} \cdot \frac{7}{5} = \frac{14}{35}$$

$$\frac{1}{11} : \frac{3}{10} = \frac{1}{11} \cdot \frac{10}{3} = \frac{10}{33}$$

$$\frac{5}{9} : \frac{7}{8} = \frac{5}{9} \cdot \frac{8}{7} = \frac{40}{63}$$