

Priprema za 2. kratku pisanu provjeru

– množenje i dijeljenje –

1) Izračunaj:

a) $7 \cdot \frac{7}{70} =$

b) $\frac{7}{10} \cdot \frac{3}{5} =$

c) $\frac{25}{12} \cdot \frac{18}{15} =$

d) $\frac{7}{4} \cdot 2 =$

e) $3\frac{1}{6} \cdot 2\frac{2}{5} =$

2) Izračunaj:

a) $\frac{20}{21} : 5 =$

b) $\frac{8}{13} : \frac{20}{26} =$

c) $10 : \frac{5}{6} =$

d) $\frac{3}{5} : \frac{15}{6} =$

e) $1\frac{1}{2} : 4\frac{1}{2} =$

3) Kvadriraj:

a) $\left(\frac{1}{8}\right)^2 =$

b) $\frac{4^2}{20} =$

c) $\left(1\frac{1}{2}\right)^2 =$

d) $1^2 - \left(\frac{2}{3}\right)^2 =$

4) Za $x = \frac{1}{4}$ odredi:

a) $3x - x^2 =$

b) $2 - 2x^2 =$

5) Izračunaj:

a) $\frac{3}{7} \cdot \frac{9}{15} \cdot \frac{21}{18} =$

b) $4\frac{1}{2} : \left(\frac{4}{5} - \frac{1}{2}\right) =$

c) $\frac{7}{8} - \frac{1}{8} : \frac{1}{6} =$

d) $\left(1\frac{1}{4} + \frac{5}{6}\right) : \left(\frac{5}{12} + \frac{5}{8}\right) =$

6) Izračunaj zbroj recipročnih vrijednosti brojeva $\frac{4}{5}$ i $\frac{8}{15}$.

7) Izračunaj recipročnu vrijednost zbroja brojeva $\frac{4}{5}$ i $\frac{8}{15}$.

8) Koliko se plati 1 kg šljiva ako se 5 kg šljiva plati $3\frac{1}{3}$ eura?

9) Za koliko je količnik brojeva $\frac{2}{3}$ i $\frac{3}{5}$ veći od njihovog umnoška?

10) Koliko koraka na putu dugačkom $2\frac{1}{4}$ metara učini čovjek čiji je korak dug $\frac{3}{4}$ metara?

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RJEŠENJA

1) Izračunaj:

$$\begin{array}{llll} \text{a) } 7^1 \cdot \frac{7}{70_{10}} = \frac{7}{10} & \text{b) } \frac{7}{10} \cdot \frac{3}{5} = \frac{21}{50} & \text{c) } \frac{25^5}{12_2} \cdot \frac{18^3}{15^3} = \frac{5}{2} & \text{d) } \frac{7}{4_2} \cdot 2^1 = \frac{7}{2} & \text{e) } 3\frac{1}{6} \cdot 2\frac{2}{5} = \frac{19}{6_1} \cdot \frac{12^2}{5} \\ & & = 2\frac{1}{2} & = 3\frac{1}{2} & = \frac{38}{5} \\ & & & & = 7\frac{3}{5} \end{array}$$

2) Izračunaj:

$$\begin{array}{lll} \text{a) } \frac{20}{21} : 5 = \frac{20^4}{21} \cdot \frac{1}{5_1} & \text{b) } \frac{8}{13} : \frac{20}{26} = \frac{8^2}{13_1} \cdot \frac{26^2}{20_5} & \text{c) } 10 : \frac{5}{6} = \frac{10^2}{1} \cdot \frac{6}{5_1} \\ = \frac{4}{21} & = \frac{4}{5} & = 12 \end{array}$$

$$\begin{array}{ll} \text{d) } \frac{3}{5} : \frac{15}{6} = \frac{3^1}{5} \cdot \frac{6}{15_5} & \text{e) } 1\frac{1}{2} : 4\frac{1}{2} = \frac{3}{2} : \frac{9}{2} \\ = \frac{6}{25} & = \frac{3^1}{2_1} \cdot \frac{2^1}{9_3} \\ & = \frac{1}{3} \end{array}$$

3) Kvadriraj: $\text{a) } \left(\frac{1}{8}\right)^2 = \frac{1}{64}$ $\text{b) } \frac{4^2}{20} = \frac{16^4}{20_5} = \frac{4}{5}$ $\text{c) } \left(1\frac{1}{2}\right)^2 = \left(\frac{3}{2}\right)^2 = \frac{9}{4} = 2\frac{1}{4}$ $\text{d) } 1^2 - \left(\frac{2}{3}\right)^2 = 1 - \frac{4}{9} = \frac{9-4}{9} = \frac{5}{9}$

4) Za $x = \frac{1}{4}$ odredi:

$$\begin{array}{ll} \text{a) } 3x - x^2 = 3 \cdot \frac{1}{4} - \left(\frac{1}{4}\right)^2 & \text{b) } 2 - 2x^2 = 2^1 \cdot \frac{1}{4_2} - 2 \cdot \left(\frac{1}{4}\right)^2 \\ = \frac{3}{4} - \frac{1}{16} & = \frac{1}{2} - 2^1 \cdot \frac{1}{16_8} \\ = \frac{12-1}{16} & = \frac{1}{2} - \frac{1}{8} \\ = \frac{11}{16} & = \frac{4-1}{8} \\ & = \frac{3}{8} \end{array}$$

5) Izračunaj:

$$\text{a) } \frac{3^1}{7_1} \cdot \frac{9^1}{15_{3 \cdot 1}} \cdot \frac{21^{3^1}}{18_2} = \frac{1}{2}$$

$$\text{b) } 4\frac{1}{2} : \left(\frac{4}{5} - \frac{1}{2}\right) = \frac{9}{2} : \frac{8-5}{10}$$

$$= \frac{9}{2} : \frac{3}{10}$$

$$= \frac{9^3}{2_1} \cdot \frac{10^5}{3_1}$$

$$= 15$$

$$\text{c) } \frac{7}{8} - \frac{1}{8} : \frac{1}{6} = \frac{7}{8} - \frac{1}{8_4} \cdot \frac{6^3}{1}$$

$$= \frac{7}{8} - \frac{3}{4}$$

$$= \frac{7-6}{8}$$

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

$$\text{d) } \left(1\frac{1}{4} + \frac{5}{6}\right) : \left(\frac{5}{12} + \frac{5}{8}\right) = \left(\frac{5}{4} + \frac{5}{6}\right) : \frac{10+15}{24}$$

$$= \frac{15+10}{12} : \frac{25}{24}$$

$$= \frac{25^1}{12_1} \cdot \frac{24^2}{25_1}$$

$$= 2$$

6) Izračunaj zbroj recipročnih vrijednosti brojeva $\frac{4}{5}$ i $\frac{8}{15}$.

„okrenemo“ razlomke, pa zbrojimo

$$\frac{5}{4} + \frac{15}{8} = \frac{10+15}{8}$$

$$= \frac{25}{8}$$

$$= 3\frac{1}{8}$$

Rješenje: broj $3\frac{1}{8}$

7) Izračunaj recipročnu vrijednost zbroja brojeva $\frac{4}{5}$ i $\frac{8}{15}$.

Izračunamo zbroj, pa dobiveni rezultat „obrnemo“

$$\frac{4}{5} + \frac{8}{15} = \frac{12+8}{15}$$

$$= \frac{20^4}{15_3}$$

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

Rješenje: broj $\frac{3}{4}$

8) Koliko se plati 1 kg šljiva ako se 5 kg šljiva plati $3\frac{1}{3}$ eura?

$$5 \text{ kg} \Rightarrow 3\frac{1}{3} \text{ eura}$$

$$1 \text{ kg} \Rightarrow 3\frac{1}{3} : 5 = \frac{10^2}{3} \cdot \frac{1}{5_1}$$

$$= \frac{2}{3} \text{ eura}$$

1 kg košta oko 67 centi.

9) Za koliko je **količnik** brojeva $\frac{2}{3}$ i $\frac{3}{5}$ veći od njihovog **umnoška**?

Npr. Za koliko je 4 veći od 3? Veći je 1! (4 - 3)

Računamo: **količnik - umnožak**

$$\begin{aligned}\left(\frac{2}{3} : \frac{3}{5}\right) - \left(\frac{2}{3} \cdot \frac{3}{5}\right) &= \left(\frac{2}{3} \cdot \frac{5}{3}\right) - \left(\frac{2}{\cancel{3}_1} \cdot \frac{\cancel{3}^1}{5}\right) \\ &= \frac{10}{9} - \frac{2}{5} \\ &= \frac{50 - 18}{45} \\ &= \frac{32}{45}\end{aligned}$$

Veći je za $\frac{32}{45}$.

10) Koliko koraka na putu dugačkom $2\frac{1}{4}$ metara učini čovjek čiji je korak dug $\frac{3}{4}$ metara?

put : duljina koraka

$$\begin{aligned}2\frac{1}{4} : \frac{3}{4} &= \frac{\cancel{4}^3}{\cancel{4}_1} \cdot \frac{\cancel{4}^1}{\cancel{3}_1} \\ &= 3\end{aligned}$$

Čovjek napravi 3 koraka.