

PONEDJELJAK, 11.5.2020.

Poštovani učenici,

najavljena provjera (Racionalni brojevi) održet će se u 11 sati.

Imat ćete 60 minuta za rješavanje, postupke pisati u bilježnicu ili na papir. Nakon što predate rješenja zadataka, u roku 10 minuta poslati postupke rješavanja (iz bilježnice ili papira) na matematikasever@gmail.hr ili u chat u Teams. Test počinje u 11:15. Podijelit ću vas u skupine pa ćete pronaći onaj kviz koji je za vas.
Pozdrav

= Racionalni brojevi =

1) Usporedi brojeve:

a) $-3\frac{2}{5} \otimes -\frac{11}{3}$

b) $-\frac{4}{5} \otimes -\frac{5}{6}$

c) $-0.9 \otimes -0.89$

$-\frac{17}{5} \otimes -\frac{11}{3}$

$-\frac{24}{30} \otimes -\frac{25}{30}$

$-0.90 \otimes -0.89$

$-\frac{51}{15} \otimes -\frac{55}{15}$

d) $-\frac{37}{36} \otimes 1$

e) $-13.2 \otimes -14.2$

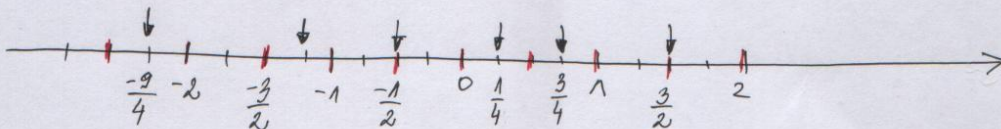
f) $-\frac{11}{30} \otimes -\frac{8}{45}$

↓
negativan broj

↓
pozitivan broj

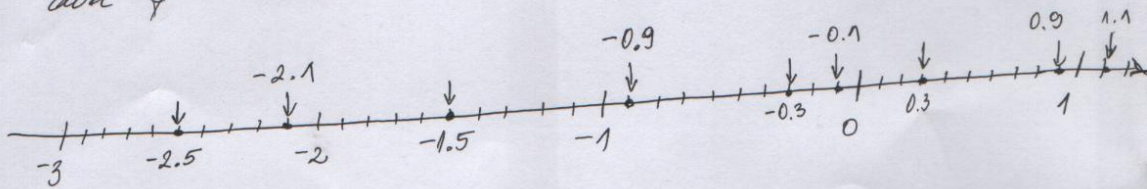
$-\frac{33}{90} \otimes -\frac{16}{90}$

2)

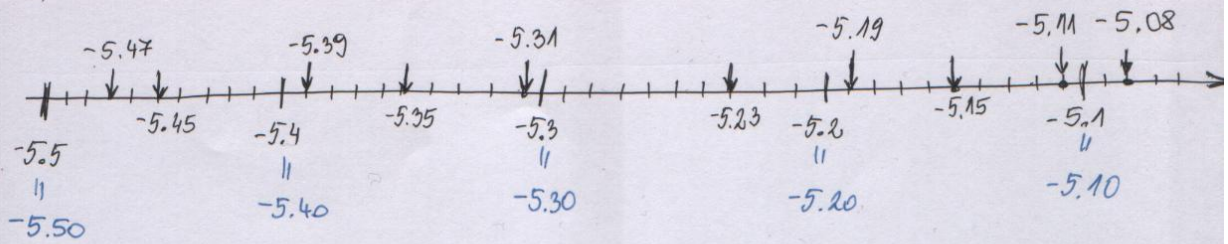


Jedinična dužina podijeljena je na 4 jednaka dijela.
Dakle, označene su četvrtine. "Dvije crtice" označavaju
POLOVINE (jedinična dužina je podijeljena na
dva jednaka dijela).

3)



Jedinična dužina podijeljena je na 10 jednakih
dijelova. Prvi dio čini $\frac{1}{10}$ jedinične dužine, odnosno 0.1.



5) Zbrajanje i oduzimanje razlomaka (decimalnih brojeva)

1) MJEŠOVITE BROJEVE → u RAZLONKE

2) Svedemo razlomke na najmanji zajednički nazivnik

3) Zbrojimo/oduzmemo razlomke

[problem se svodi na zbrajanje i oduzimanje CIJELIH brojeva].

$$a) \frac{4}{5} + \frac{-3}{4} = \frac{4}{5} - \frac{3}{4} = \frac{16}{20} - \frac{15}{20} = \frac{1}{20}$$

$$b) \frac{-1}{10} + \frac{5}{6} = \frac{-3}{30} + \frac{25}{30} = \frac{22}{30} = \frac{11}{15}$$

$$c) -\frac{1}{6} - 0.7 = \frac{-1}{6} - \frac{7}{10} = \frac{-5}{30} - \frac{21}{30} = \frac{-26}{30} = \frac{-13}{15}$$

$$d) -3\frac{1}{2} - (-1\frac{1}{8}) = \frac{-7}{2} + \frac{1}{8} = \frac{-28}{8} + \frac{1}{8} = \frac{-27}{8}$$

$$e) -5\frac{3}{4} + 2\frac{5}{8} = \frac{-23}{4} + \frac{21}{8} = \frac{-46}{8} + \frac{21}{8} = \frac{-25}{8} = -3\frac{1}{8}$$

$$f) 2.746 - 4.47 = -1.724$$

→ predznak vedeg uzmemo

→ brojeve oduzmemo

$$\begin{array}{r} 4.470 \\ - 2.746 \\ \hline 1.724 \end{array}$$

6) Množenje i dijeljenje

MNOŽENJE → „unakrsno“ kratimo

→ množimo brojnik s brojičnikom,
nazivnik s nazivnikom

DIJELJENJE → množimo s RECIPROČNIM brojevima

a) $\frac{-7}{9} \cdot 3 = \frac{-7}{\cancel{9}^3} \cdot \frac{\cancel{3}^1}{1} = \frac{-7}{3} = -2 \frac{1}{3}$ minus • plus = minus

b) $-\frac{\cancel{8}^1}{15} \cdot \left(\frac{-\cancel{9}^3}{\cancel{36}^4}\right) = \frac{3}{20}$
minus • minus = plus

c) $\frac{-9}{14} \cdot 2 \frac{2}{3} = \frac{-\cancel{9}^3}{14} \cdot \frac{\cancel{8}^4}{\cancel{3}^1} = \frac{-12}{7} = -1 \frac{5}{7}$
↓ pretvoriti u razlomak

d) $\frac{3}{5} : (-2) = \frac{3}{5} \cdot \frac{-1}{2} = \frac{-3}{10}$ → množimo s recipročnim

e) $\frac{-42}{65} : \frac{7}{13} = \frac{-\cancel{42}^6}{\cancel{65}^5} \cdot \frac{\cancel{13}^1}{1} = \frac{-6}{5} = -1 \frac{1}{5}$

f) $-5 \frac{1}{3} : (-4 \frac{5}{6}) = \frac{-16}{3} : \left(-\frac{29}{6}\right) = \frac{-16}{\cancel{3}^1} \cdot \left(\frac{-\cancel{6}^2}{29}\right) = \frac{32}{29} = 1 \frac{3}{29}$

g) $-3.47 \cdot 14.2 = -49.274$

Množimo kao prirodne brojeve. Na kraju određujemo decimalnu točku.

Umnožak će imati onoliko decimala koliko oba faktora imaju decimala zajedno.

$$\begin{array}{r} \overset{\downarrow \downarrow}{47} \cdot \overset{\downarrow}{14} \overset{\downarrow}{.} 2 \\ \hline 347 \\ + 1388 \\ \hline 49274 \end{array}$$

$$6.h) \quad -2.88 : (-0.3) = -28.8 : (-3) = 9.6$$

$$28.8 : 3 = 9.6$$

$$\begin{array}{r} -28 \\ \underline{18} \\ -18 \\ \underline{0} \end{array}$$

minus :
minus
daje plus

znawo dzielimy decimalni broj s prirodnim

$$i) \quad -2.55 = \frac{1}{2} = -2.55 : 0.5 = -25.5 : 5 = -5.1$$

$$25.5 : 5 = 5.1$$

$$\begin{array}{r} -25 \\ \underline{05} \\ -5 \\ \underline{0} \end{array}$$

4) *liczenie*

$$a) \quad \frac{-4}{5} + \frac{7}{12} - \left(\frac{1}{5} - 2\frac{3}{4} \right) + (-0.5) = \frac{-2}{5} + \frac{7}{12} - \left(\frac{1}{5} - \frac{11}{4} \right) - \frac{1}{2}$$

$$= \frac{-2}{5} + \frac{7}{12} - \frac{1}{5} + \frac{11}{4} - \frac{1}{2}$$

$$= \frac{-24}{60} + \frac{35}{60} - \frac{12}{60} + \frac{165}{60} - \frac{30}{60}$$

$$= \frac{11}{60} - \frac{12}{60} + \frac{135}{60}$$

$$= \frac{-1}{60} + \frac{135}{60}$$

$$= \frac{134}{60} = \frac{67}{30}$$

$$= 2\frac{7}{30}$$

$$7.6) \left(\frac{-4}{5} + \frac{3}{4} \right) \cdot \left(-\frac{1}{2} - \frac{2}{5} \right) = \left(\frac{-16}{20} + \frac{15}{20} \right) \cdot \left(\frac{-5}{10} - \frac{4}{10} \right)$$

$$= \frac{-1}{20} \cdot \frac{-9}{10}$$

$$= \frac{9}{200}$$

$$c) \left(\frac{5}{12} + \frac{3}{4} - \frac{5}{6} \right) \cdot 1 \frac{4}{5} - 0.3 =$$

racunamo zagradu

množimo

na kraju odužimamo
(REDO SLIJED RACUNSKIH
OPERACIJA!)

$$= \left(\frac{5}{12} + \frac{9}{12} - \frac{10}{12} \right) \cdot \frac{9}{5} - \frac{3}{10} \quad \rightsquigarrow \text{racunamo zagradu}$$

$$= \frac{4}{12} \cdot \frac{9}{5} - \frac{3}{10} \quad \rightsquigarrow \text{najprije množimo}$$

$$= \frac{3}{5} - \frac{3}{10} \quad \rightsquigarrow \text{svodimo razlomke na zajed. nazivnik}$$

$$= \frac{6}{10} - \frac{3}{10} \quad \rightsquigarrow \text{odužimamo rac. brojeve}$$

$$= \frac{3}{10}$$

POZOR!

- 1) Računamo zagradu
- 2) Množimo i dijelimo
- 3) Zbrajamo i odužimamo
- 4) Rezultat, ako možemo, skratimo i pretvorimo u mješoviti broj

8. b)

$$9\frac{1}{8} - 2\frac{1}{8} \cdot \left(1\frac{1}{5} - 1\frac{13}{20} : 2\frac{1}{5} + \frac{3}{5}\right) : 2\frac{1}{8} - 1\frac{1}{8} \cdot 2\frac{2}{3} =$$

$$\Downarrow \\ = 1 \quad \left(2\frac{1}{8} : 2\frac{1}{8} = 1\right)$$

$$= \frac{73}{8} - \left(\frac{6}{5} - \frac{\overset{3}{33}}{20} \cdot \frac{\cancel{8}^1}{\cancel{14}_1} + \frac{3}{5}\right) - \frac{\overset{3}{3}}{8} \cdot \frac{\cancel{8}^1}{\cancel{3}_1}$$

$$= \frac{73}{8} - \left(\frac{6}{5} - \frac{3}{4} + \frac{3}{5}\right) - 3$$

$$= \frac{73}{8} - \frac{6}{5} + \frac{3}{4} - \frac{3}{5} - 3$$

$$= \frac{365}{40} - \frac{48}{40} + \frac{30}{40} - \frac{24}{40} - \frac{120}{40}$$

$$= \frac{317}{40} + \frac{6}{40} - \frac{120}{40}$$

$$= \frac{323}{40} - \frac{120}{40}$$

$$= \frac{203}{40}$$

$$= 5\frac{3}{40}$$

9)

$$\begin{aligned} -1 \cdot \frac{3}{4} - \left(-1 - \frac{3}{4}\right) &= \frac{-3}{4} - \left(\frac{-4}{4} - \frac{3}{4}\right) \\ &= \frac{-3}{4} - \left(\frac{-7}{4}\right) \\ &= \frac{-3}{4} + \frac{7}{4} \\ &= \frac{4}{4} \\ &= 1 \end{aligned}$$

Vedi je za jedan.

$$\begin{aligned} 10) \quad (2.74 - (-0.5)) : \left(-\frac{1}{4} : \frac{1}{2}\right) &= (2.74 + 0.5) : \left(\frac{-1}{4} \cdot \frac{2}{1}\right) \\ &= 3.24 : \left(-\frac{1}{2}\right) \\ &= 3.24 : (-0.5) \\ &= 32.4 : (-5) \\ &= -6.48 \end{aligned}$$

$$\begin{array}{r} 32.4 : 5 = 6.48 \\ 24 \\ 40 \\ 0 \end{array}$$

Riješila:

Čović Mirela, prof.