

Proširivanje i skraćivanje razlomaka - rješenja -

1) a) Razlomak $\frac{5}{6}$ proširi s 4. $\frac{5 \cdot 4}{6 \cdot 4} = \frac{20}{24}$ c) Razlomak $\frac{8}{24}$ skрати s 2. $\frac{8 : 2}{24 : 2} = \frac{4}{12}$

b) Razlomak $\frac{12}{23}$ proširi s 3. $\frac{12 \cdot 3}{23 \cdot 3} = \frac{36}{69}$ d) Razlomak $\frac{36}{46}$ skрати do kraja. $\frac{\cancel{3}6^{18}}{\cancel{4}6_{23}} = \frac{18}{23}$

2) Razlomak $\frac{5}{9}$ proširi tako da mu: a) nazivnik bude 45 $\frac{5}{9} = \frac{25}{45}$ (prošili sa 5)

b) brojnik bude 45 $\frac{5}{9} = \frac{45}{81}$ (prošili sa 9)

3) Dopuni brojevima koji nedostaju:

a) $\frac{1 \cdot 4}{4 \cdot 4} = \frac{4}{16}$

b) $\frac{4}{5} = \frac{24^4}{30^5}$

c) $\frac{2}{3} = \frac{8^2}{12^3}$

d) $\frac{7 \cdot 4}{5 \cdot 4} = \frac{28}{20}$

4) Najprije skрати razlomke, a zatim ih napiši u obliku mješovitog broja:

a) $\frac{12^3}{3^2} = \frac{3}{2} = 1\frac{1}{2}$

b) $\frac{15^5}{3} = \frac{5}{3} = 1\frac{2}{3}$

c) $\frac{27^9}{15^5} = \frac{9}{5} = 1\frac{4}{5}$

d) $\frac{32^{16}^8}{12^6} = \frac{8}{3} = 2\frac{2}{3}$

5) Skрати razlomke do kraja (ako možeš, rezultat pretvori u mješoviti broj):

a) $\frac{72^8}{63^7} = \frac{8}{7} = 1\frac{1}{7}$

b) $2\frac{10^5}{24^{12}} = 2\frac{5}{12}$

c) $\frac{30^{15}^5}{54^{27}^9} = \frac{5}{9}$

d) $\frac{360^{36}^2}{180^{18}^1} = 2$

e) $1\frac{32^8}{44^{11}} = 1\frac{8}{11}$

6) Skрати razlomke:

a) $\frac{1^1 \cdot 12^2 \cdot 25^5}{10^2 \cdot 18^3 \cdot 14^2} = \frac{5}{6}$

b) $\frac{10^2 \cdot 3^1 \cdot 14^2}{7^1 \cdot 8^2 \cdot 15^3 \cdot 9^3} = \frac{1}{18}$

7) Skрати razlomke:

a) $\frac{10 + 20}{25} = \frac{30^6}{25^5}$

◦ zbrojimo 10 i 20, pa kratimo

b) $\frac{15 \cdot (6 + 5)}{30} = \frac{15^1 \cdot 11}{30^2}$

◦ zbrojimo 6 i 5, pa kratimo 15 i 30

$= \frac{6}{5}$

◦ razlomak u mješoviti broj

$= \frac{11}{2}$

◦ razlomak u mješoviti broj

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

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

c) $\frac{8 \cdot 15 - 8 \cdot 5}{8 \cdot 15 + 8 \cdot 5} = \frac{8 \cdot (15 - 5)}{8 \cdot (15 + 5)}$

◦ izlučimo zaj. faktor 8

d) $\frac{15 \cdot 9 + 15 \cdot 3}{15 \cdot 8} = \frac{15 \cdot (9 + 3)}{15 \cdot 8}$

◦ izlučimo zaj. faktor 15

$= \frac{8^1 \cdot 10^1}{8^1 \cdot 20^2}$

◦ kratimo umnoške

$= \frac{15^1 \cdot 12^3}{15^1 \cdot 8^2}$

◦ kratimo umnoške

$= \frac{1}{2}$

$= \frac{3}{2}$

◦ pretvorimo u mješoviti broj

$= 1\frac{1}{2}$

8) Koliki dio lika predstavljaju dijelovi A, B, C, D i E?
 Rezultate napiši u obliku neskrativog razlomka.

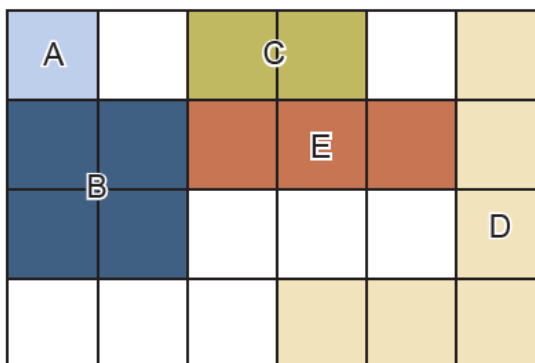
A: $\frac{1}{24}$

B: $\frac{4^1}{24_6} = \frac{1}{6}$

C: $\frac{2^1}{24_{12}} = \frac{1}{12}$

D: $\frac{6^1}{24_6} = \frac{1}{4}$

E: $\frac{3^1}{24_6} = \frac{1}{8}$



9) Koji su razlomci do kraja skraćeni? (zaokruži ih)

$\frac{2}{3}$

$\frac{9}{12}$

$\frac{5}{5}$

$\frac{5}{4}$

$\frac{8}{10}$

$\frac{7}{16}$

$\frac{8}{46}$

$\frac{7}{9}$

$\frac{15}{10}$

$\frac{11}{8}$

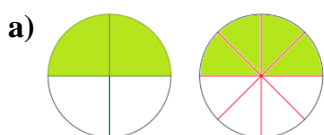
$\frac{14}{21}$

$\frac{8}{6}$

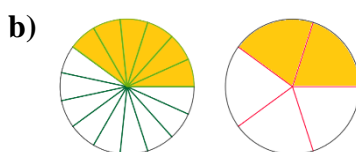
$\frac{13}{5}$

$\frac{4}{7}$

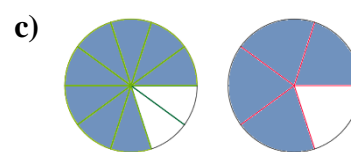
10) Dopuni. Bojom istakni jednake odnose između razlomaka:



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



$\frac{6}{15} = \frac{2}{5}$



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

11) Popuni prazna mjesta tako da naznačene jednakosti budu točne:

a) $\frac{a+1}{3} = \frac{12}{18}$

b) $\frac{x-3}{4} = \frac{12}{16}$

a) $\frac{a+1}{3} = \frac{12^2}{18^3}$ (skratimo do nazivnika 3)

b) $\frac{x-3}{4} = \frac{12^3}{16^4}$ (skratimo do nazivnika 4)

$\frac{a+1}{3} = \frac{2}{3}$ (uspoređujemo brojnike)

$\frac{x-3}{3} = \frac{3}{4}$ (uspoređujemo brojnike)

$a+1=2$ (riješimo jednadžbu)

$x-3=3$ (riješimo jednadžbu)

$a=1$

$x=6$